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The Flora of Mona and Monito Islands, Puerto Rico (West Indies)

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The Flora of Mona and Monito Islands, Puerto Rico (West Indies)[1]

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INTRODUCTION

As stated in our first paper relative to the investigations on the flora of the smaller islands and keys adjacent to Puerto Rico, published in October 1971, which comprised a study of the vegetation of Desecheo Island (31), this bulletin reports further botanical investigations in those islands. Now, it corresponds to Mona and Monito Island, areas which have been explored from several scientific points of view particularly during the last 4 to 6 years. The different papers listed in the Literature Cited at the end of this paper provide detailed information on geology, physiography, and other features of Mona and Monito. Nevertheless, the authors are including herewith a brief summary of some of the latest findings about these interesting islands. Information on the vegetation of the small island of Monito is hereby published for the first time, something which will be of further value to those interested in floral investigations.

GEOGRAPHIC DESCRIPTION

Mona Island, politically a part of Puerto Rico, is located in the Mona Passage of the Caribbean Sea, between Puerto Rico and the Dominican Republic, in latitude 18°3-8′ N and longitude 67°51-57′ W. This is about 42 mi S 73° W of its nearest point to Puerto Rico (Punta Jigüero), 45 mi S 79° W from Mayagüez, and 37 mi S 60° E from Punta Espada, in the Domican Republic. Its area is 13,638 acres, equivalent to 14,043 cuerdas.[3] The island has the shape of a lima bean with its concavity toward the north. Is largest dimension (east-west) is 6.8 miles and its greatest width 4.3 miles, having a total shore line of approximately 20 mi in length.

Monito Island lies in latitude 18°10′ N and longitude 67°57′ W; that is, 3.1 mi N 21° W from Cabo Barrio Nuevo, its nearest point to Mona. It has an approximate area of 40 acres. The island is more or less rectangular in shape, its greatest length (east-west) is about 1,600 ft and its greatest width 1,200 ft, with less than a mile of shore line (fig. 1).

CLIMATE

Although Mona Island lies in the tropical maritime belt of the easterly trade winds, its climate is semiarid. The average annual rainfall of 31.85 in does not meet the water needs of growing vegetation and the year round moisture amounts to 30.02 in of water deficiency. These figures are based on a 30-year record ending in the last decade as a worldwide standard base set by the World Meterological Organization for determining climatological normals. Strong tropical storms and hurricanes did not affect the island during this period thus resulting in a somewhat lower mean annual rainfall than cited in previous studies. However, this should not be considered as an indication of significant climatic change towards a drier regime. Rainfall, temperature and resulting vegetative growth are similar to the south coast of Puerto Rico around the Guánica area. Extremes of temperature are tempered by the surrounding ocean, although the islands are more subject than Puerto Rico to cooler air outbreaks during the winter months. For additional information on the climate of Mona, see Calvesbert (7).

GEOLOGY AND PHYSIOGRAPHY

Aaron in 1973 (1) gives interesting information on the geology and mineral resources of Mona and Monito Islands, areas which are composed almost entirely of carbonate rocks, stratified limestone and dolomite, reef rock and boulder rubble, that range in age from the Lower or Middle Eocene (about 18 to 25 million years old) to Holocene (Recent). The bulk of the islands is composed of two generally flat-lying rock units, the Isla de Mona dolomite and the Lirio limestone.

Both islands are very flat, the upland surface ranging in elevation in Mona from more than 90 m near Cabo Noroeste to about 30 m near Playa de Pájaros (fig. 2). The upland surface or

[1] Manuscript submitted to the Editorial Board September 15, 1976.

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[3] A "cuerda" is a land measurement used in Puerto Rico equivalent to 0.9712 acre.

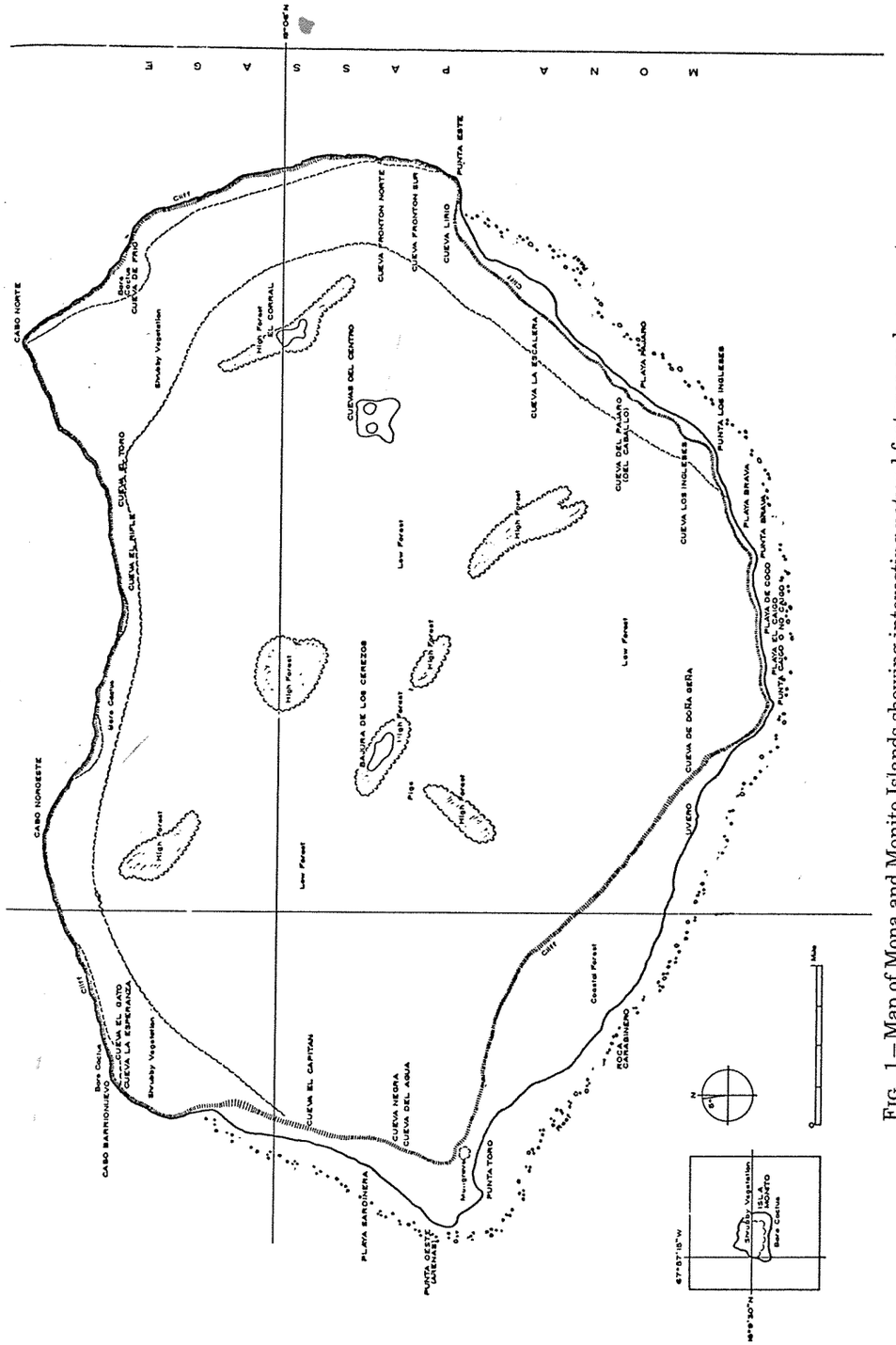

FIG. 1—Map of Mona and Monito Islands showing interesting natural features such as vegetation zones, beaches, caves and capes, where most of the plant collections were made.

plateau undulates very gently and slopes less than one degree generally southward. In spite of the apparent overall flatness of the plateau, the ground surface is very rough, thus making it very difficult to travel on foot.

The plateau is bounded almost completely by steep vertical escarpments or cliffs. These cliffs drop to the sea, except where the plateau is bounded by a narrow coastal lowland or coastal plain along the western, southwestern and southeastern sides of the island. This is the area generally known as Sardinera and Uvero.

The coastal plain comprises about 931 cuerdas (900 acres) and it is the zone where the vegetation is more luxuriant than that of the plateau forest. In the Sardinera area there is a small patch, about one acre in size, under brackish water, with a thick growth of mangrove trees. The ares is inhabited by birds and crabs.

The peculiarities of the soils of Mona were briefly discussed by Rivera (25).

EARLY BOTANICAL INVESTIGATIONS

Previous to the first botanical explorations in Mona, scientists interested in other subjects had visited the island. According to Santana (6) the first record of a scientist exploring in Mona is by the Puerto Rican chronicler, Don José Julián Acosta y Calbo, who in 1858 unsuccessfully searched for traces of the early Indian populations. The earliest published records of insects in Mona, according to Ramos (24) appear to be those of the elaterid beetle, *Adelocera rubida* Schwarz and the phasmid, *Lamponius bockii* Brunner & Redtenbacher, described from the island in 1902 and 1908, respectively. These insects were undobtedly collected by some member of the German personnel working at that time in the bat guano enterprise established there. In December 1913, E. G. Smyth and R. H. Van Zwaluwenburg, both entomologists, visited the island and collected insects there.

Plants were first collected in the island in

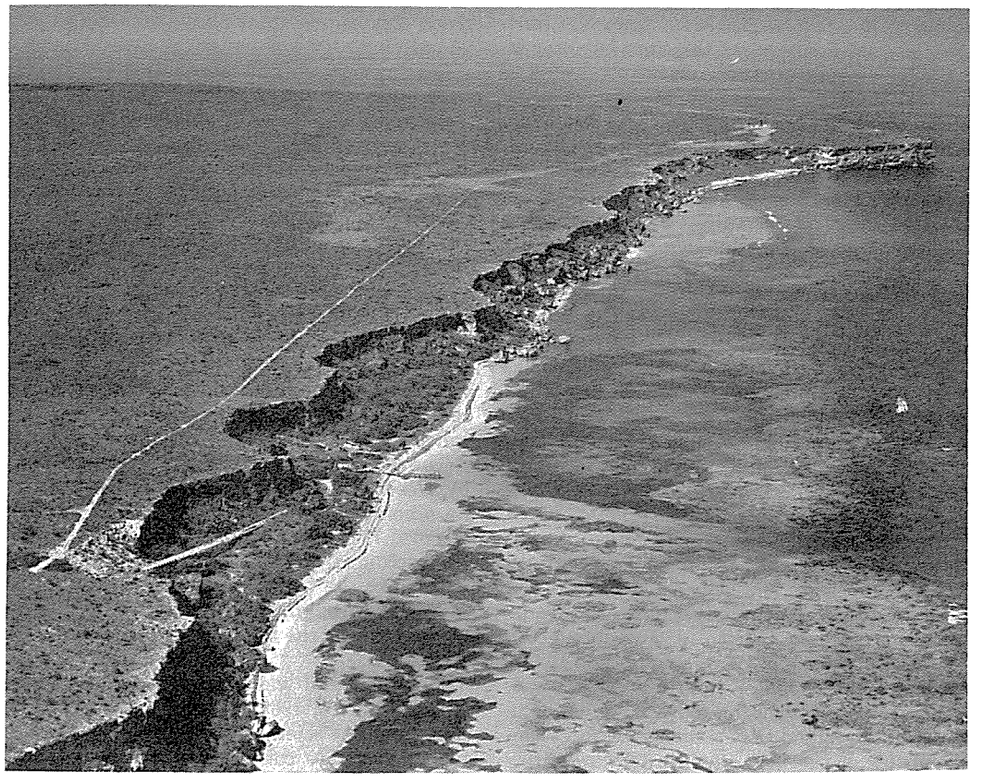

FIG. 2—Shore line of the southeast end of Mona Island from Punta Los Ingleses to Punta Este. The cliffs or escarpments along the coast, the dock at Playa de Pájaros, and the concrete road from the dock to the lighthouse at the extreme righthand corner near Punta Este are plainly visible.

May 1913, by F. L. Stevens and W. E. Hess, who obtained about 150 different species of flowering plants and various species of parasitic fungi. Their trip was followed almost immediately by that of a group of scientists including entomologists, zoologists and botanists, directed by N. L. Britton of the New York Botanical Garden, J. F. Cowell, Director of the Buffalo Botanic Garden, Frank E. Lutz, Assistant Curator of Invertebrates, American Museum of Natural History in New York and W. E. Hess, Plant Propagator of the Puerto Rico Agricultural Experiment Station in Mayagüez. The group explored the island from February 20 to 26, 1914. A year later, in May 1915, N. L. Britton published the results of his botanical investigations in "The Vegetation of Mona Island" (3).

Since then, 25 years elapsed and nobody else visited Mona for plant collection. In October 28, 1940 and December 20 of the same year, L. E. Gregory and F. J. Roena, both of the U.S. Forest Service, visited Mona and collected plants there.

During March 1 to 11, 1944, Carlos E. Chardón and José I. Otero, at the time Director of the Institute of Tropical Agriculture and Librarian of the same institution, respectively, collected plants intensively in the island. On April 1 through 7, 1944, a group composed of Chardón, Otero (botany), L. F. Martorell, George N. Wolcott and José A. Ramos (entomology), Jorge J. Serrallés (arachnida) and Ventura Barnés (ornithology), collected in Mona. Further plant collections were made by Chardón and Otero, at times accompanied by Ramos, in April 5 and 20, 1944. During May of that year (1 to 5; 15 to 18, and 23 to 26) Chardón and Otero once more collected plant specimens, at one time accompanied by A. González-Más, botanist of the College of Agriculture and Mechanic Arts, at Mayagúez, who at the time had particular interest in collecting sedges (Cyperaceae). In July 19 to 24, 1944, Chardón, Otero and Gregory visited Mona again, and in August 18 through 20 of the same year, collected with Harry A. Beatty, an entomologist from St. Croix (U.S. Virgin Islands).

During September 1944, Frank H. Wadsworth and José A. Gilormini, Forester of the Tropical Forest Experiment Station and Planting Specialist of the Insular Forest Station, respectively, both of Río Piedras, Puerto Rico, surveyed the island to determine the forest potentialities of the area. Soon afterwards they published their findings (28) including in their report a list of 24 common tree species of Mona, although three of them, namely; *Guaiacum officinale* L., *Guazuma ulmifolia* (L.) Cockerell and *Capparis indica* (L.) Fawc. & Rendle, are not known to occur there.

In May 15 to 18, 1947, Chardón, Otero and González-Más returned once more to Mona to continue their plant collecting. In July 31, 1949, U.S. Forest Service collectors spent the day collecting there.

Almost 5 years later E. L. Little Jr., Dendrologist of the U.S. Forest Service at Washington, D.C. and F. H. Wadsworth, returned for additional plant collecting in Mona during August 26 to 28, 1954. Seven months later Little, accompanied by Capt. Merle L. Kuns, of the U.S. Air Force, collected trees and shrubs at El Corral and other areas in the plateau, at Playa de Pájaros, and along the coastal lowland. In June 1955, Little published his Trees of Mona (16).

RECENT BOTANICAL EXPLORATIONS

On April 15 through 17, 1962 the senior author visited Mona with F. H. Wadsworth and a group of boy scouts. During that period he had the opportunity to make an annotated list of trees, shrubs and other plants occurring in the island, but did not collect plants. Almost 5 years later the island was once more botanically explored by Woodbury, Martorell and García, when a large number of plant specimens were collected in different areas of the plateau and in the coastal plain from Sardinera to Uvero. Woodbury, accompanied by Wadsworth, Whitmore and P. Weaver (the last two U.S. Forest Service) visited Mona on October 22 to 24, 1968. Woodbury once more made plant annotations.

Woodbury, Martorell and García, collected again on December 11 to 13, 1971, after spending one day in the smaller island of Desecheo observing the flora and the occurrence of arboreal termites. During this short period they collected numerous plant specimens in Mona.

The last plant collections in Mona were made by Woodbury in June 1 through 5, 1972, when he accompanied members of the Puerto Rico Natural History Society; in June 1 through 4, 1974 accompanied by Lee Rogers and Bárbara Cintrón of the Office of Natural Resources; on March 22 through 26, 1975, again with another larger group of the Puerto Rico Natural History Society.

Monito Island was visited by Cameron Kepler on June 6, 1969, when he went accompanied by other scientists to make bird observations there. He collected 16 plant specimens which he later gave to Woodbury. On June 19 and 20, 1973, the senior author accompanied by Kepler, Noel Snyder and Herbert Raffaele went to the island once more to continue bird observations. Further plant specimens were collected, 36 different plant species in all, including 5 cacti species noted, but not collected.

It is very unfortunate that Chardón and Otero never published the results of their plant collections in Mona Island. However, their plant specimens are preserved in the Agricultural Experiment Station's Herbarium. González-Más published the results of his collections in his 1964 doctoral thesis (13).

With few exceptions, the plant records listed in this paper are represented by collections made by Britton, Cowell, Hess, Stevens, Chardón, Otero, Ramos, González-Más, Little, Woodbury, Martorell, García, and others cited in the text. The authors had the opportunity of studying many of the plant specimens collected by Little, Gregory and Roena, some of which are deposited in the U.S. Forest Service Herbarium, at Río Piedras.

THE VEGETATION OF MONA

During the Taíno period, that is, at the beginning of the Spanish colonization, the Taíno indians living in the island cultivated cassava as their staple food. Later, the Spaniards introduced melons which were of excellent quality. In 1524 alone, 85 tons of cassava were shipped to San Juan, capital of Puerto Rico. During this period, corn, beans, peppers, cotton shirts and hammocks were also sent (28). Wadsworth and Gilormini (29) include among other crops: squash, pigeon peas, beans, sweet potatoes, peanuts, tobacco, cotton, sugarcane and even elephant grass, as being successfully grown on the coastal plain.

The above information refers to the introduced and cultivated plants grown in Mona during its early period. The natural vegetation of the island, of course, is totally different.

In spite of Mona's small size and its distance from large land masses, its lack of deep, fertile soil and its low rainfall, it supports a known flora to date of 417 vascular plant species, including the unpublished collections of Stevens and others. In 1955, Little published on the trees and shrubs of Mona (16) listing 100 species, out of which many were already recorded by Britton in his original paper on the vegetation of Mona (3). Little added 33 new plant records thus bringing it to a total of 262 plant species. Recent collections have added 155 more, bringing the total of known plant species to 417. Further detailed study at different seasons will undoubtedly increase the number of species.

Mona's flora for the most part is similar to that of the Guánica Forest in southwest Puerto Rico, plus a touch of southeastern Dominican Republic. The distribution pattern shows that 40 species are unique. Five are found only in Mona; 27 have migrated west to Mona but not beyond and 8 species have migrated east to Mona but not beyond. The following list shows the species involved:

MONA AND EAST

1. *Antirhea acutata*
2. *Argythamnia fasciculata*
3. *Caesalpinia melanosperma*
4. *Cassia granulata*
5. *Chamaesyce cowelli*
6. *Chamaesyce turpinii*
7. *Comocladia dodonaea*
8. *Cynanchum lineare*
9. *Ficus stahlii*
10. *Forestiera eggersiana*
11. *Galactia dubia*
12. *Harrisia portoricensis*
13. *Jacquemontia cayensis*
14. *Jacquinia arborea*
15. *Krameria ixina*
16. *Mammillaria nivosa*
17. *Melocactus intortus*
18. *Morisonia americana*
19. *Opuntia repens*
20. *Opuntia rubescens*
21. *Phyllanthus pentaphyllus* ssp. *polycladus*
22. *Pilosocereus royenii*
23. *Pisonia albida*
24. *Portulaca caulerpoides*
25. *Reynosia uncinata*
26. *Tabebuia heterophylla*
27. *Wedelia lanceolata*

MONA AND WEST

1. *Caesalpinia monensis*
2. *Domingoa haematochila*
3. *Guapira longifolia*
4. *Ipomoea microdactyla*
5. *Malpighia setosa*
6. *Opuntia moniliformis*
7. *Pseudophoenix sargentii* ssp. *saonae*
8. *Zizyphus taylori*

MONA ONLY

1. *Epidendrum brittonianum*
2. *Chamaesyce monensis*
3. *Chamaesyce* sp. (new)
4. *Cynanchum monense*
5. *Eupatorium oteroi*

The above distribution pattern shows that most of Mona species have a wide range, but some have a very narrow and peculiar distribution, such as *Harrisia* which was described from Ponce (southern Puerto Rico) and has not been observed since, thus occurring only in Mona, Monito and Desecheo. Another cactus, *Mammillaria nivosa* has a peculiar distribution pattern, from Mona east to Desecheo and Tortola, but skipping the larger island of Puerto Rico (30).

Mona Island vegetative cover can be divided in the following types:

	Acreage
1. Coastal	
a. Sandy beach	50
b. Rocky beach	40
c. Cliffs	10
d. Beach strand (evergreen littoral)	100
2. Coastal plain	
a. Plantations	320
b. Coastal plain forest	300
c. Grassy to *Lantana-Croton* shrub	100
d. Base of cliffs	50
e. Pond area	1
3. Plateau	
a. Rock plate	200
b. Dwarf coastal shrub	940
c. Cactus shrub	300
d. Deciduous forest	10,500
e. Depression Mesic forest	360
f. Grassy to *Croton-Lantana* shrub	180
	13,351
Roads, buildings, etc.	287
Total	13,638

I. COASTAL VEGETATION

The coastal unstable sand formation contains the least number of species of any habitat on Mona because of the drastic environmental impact by waves, sea blast, turtles and man. This area of shifting sands is dominated by *Sporobolus virginicus, Sesuvium portulacastrum, Cenchrus* spp., *Chamaesyce buxifolia, Ipomoea pes-caprae* and *Canavalia maritima.*

The rocky beach as commonly seen to the east and west of Uvero is composed of the following species: *Sporobolus virginicus, Fimbrystilis cymosa, Suriana maritima, Conocarpus erectus, Coccoloba uvifera, C. krugii* × *uvifera, Erithalis fruticosa, Jacquinia arborea, Dodonaea viscosa* and *Strumpfia maritima.*

Where cliffs are close to the sea on the protected south coast of Mona, one finds large trees of *Hippomane mancinella, Ficus citrifolia, Conocarpus erectus* and possibly the introduced *Cocos nucifera* and *Terminalia catappa.* Small trees or vines often seen are *Capparis flexuosa, C. cynophallophora, Pithecellobium unguiscati, Erithalis fruticosa* and *Stigmaphyllon periplocifolium.*

Just behind this zone there is a semi-stable shrub zone dominated by *Coccoloba uvifera, Conocarpus erectus, Tournefortia gnaphalodes, Suriana maritima, Ernodea littoralis,* and *Erithalis fruticosa.* This develops on sand into a beach strand or dry evergreen littoral woodland or forest with a well defined tree zone to 10 m (33 ft) or more high and diameters of 30 cm (1 ft) or more. The dominant trees of this type are: *Bumelia obovata, Pithecellobium unguis-cati, Eugenia foetida, E. rhombea, Erithalis fruticosa, Amyris elemifera, Coccoloba diversifolia, Conocarpus erectus, Tabebuia heterophylla, Canella winterana, Jacquinia arborea, Bourreria succulenta, Gyminda latifolia, Crossopetalum rhacoma, Guaiacum sanctum, Plumeria obtusa* and *Capparis cynophallophora.*

The shrub layer is dominated by *Croton lucidus, C. betulinus* and *Lantana involucrata* in the open areas and *Caesalpinia divergens, Ernodea littoralis, Corchorus hirsutus, Randia aculeata, Phyllanthus epiphyllanthus, Rivina humilis* and *Argythamnia candicans.* The vines are few in number but rather common. The most abundant is *Stigmaphyllon periplocifolium* and scattered plants of *Matelea maritima, Caesalpinia bonduc, Capparis flexuosa* (a vine-like shrub to a small tree). The herbaceous layer which is greatly altered by goats has small infrequent groups of *Paspalum laxum* and *Setaria utowanaea.* Epiphytes are rather sparse, but one can frequently see the beautiful flowering endemic *Epidendrum brittonianum* and the very large form of *Tillandsia utriculata.*

II. COASTAL PLAIN

The coastal plain forest is well developed along the south coast between Sardinera and beyond Uvero. It is an area of much disturbance in the past. A larger part of it has been under cultivation and the western end was cleared and put into plantations of *Casuarina equisetifolia* and *Swietenia mahagoni.* The *Casuarina* or Australian pine is an open forest with trees 30 m or more in height and 0.5 m or more in trunk diameter. It has been invaded by many of the coastal plain species and in time will probably revert back to the original vegetation.

Just east of this plantation is another planting of mahogany, *Swietenia mahagoni* with many trees reaching 10 m high or more and with trunk diameters between 15 and 30 cm. This area is also being heavily invaded by natural plant species as well as many young mahogany plants.

The normal or native vegetation is occupied by a deciduous or mesic forest very similar to the beach strand or littoral evergreen, but with many more species. In some areas the trees are literally covered by the epiphytes, *Tillandsia utriculata, T. recurvata* and the two orchids, *Epidendrum brittonianum* and *Domingoa haematochila.* The area east of the airstrip is different in that it has many of the fan-leaved palm, *Thrinax morrisii* and the shrub, *Phyllanthus epiphyllanthus.* The tallest indigenous species, úcar, *Bucida buceras,* is found only in small patches within this type. This forest type is only 10 m or less tall except for a few individual trees which may reach 15 m or more. Most of these trees have trunk diameters of less than 20 cm, but few reach diameters of 1 m or more. In some areas of this forest and in others where the density of trees is high, the goats have completely denuded the plants of the herbaceous and shrubby layer, thus giving the forest a very open appearance.

Cleared or open areas are dominated by *Lantana* and different *Croton* spp.

The cliff bases have the best developed natural forest on the island with trees attaining heights of 25 m or more and trunk diameters of about 1 m. Some of the larger species such as *Bumelia obovata, Mastichodendron foetidissimum, Lonchocarpus domingensis, Chlorophora tinctoria, Ficus stahlii, Terminalia catappa, Casuarina equisetifolia, Enterolobium cyclocarpum* (listed by Little in 1955 as being 70′ × 14″ is now estimated to be 80′ × 30″), *Roystonea borinquena, Nectandra coriacea, Ficus citrifolia,* and *Hippomane mancinella.* Where cliffs are very near to the sea, *Hippomane mancinella* is often the dominant species followed by *Ficus citrifolia, Capparis flexuosa, C. cynophallophora* and *Conocarpus erectus.*

In one place near the cliff at Sardinera there is a small pond with brackish water which is surrounded by a grassy community of *Paspalum vaginatum.* To the west of the pond is a low mangrove area dominated by *Laguncularia racemosa, Conocarpus erectus* and *Rhizophora mangle.* It is bordered by a few very large trees of *Hippomane mancinella* and smaller ones of *Hibiscus tiliaceus* and *Thespesia populnea.*

PLATEAU VEGETATION

The upland or plateau vegetation is by far the largest in acreage and also the most diverse. The eastern and northern cliff areas produce a very dwarfed vegetation due to the strong winds, salt spray and the meager soil deposits. This rough sharp-angled to stony rock-plate soil produces two types of dwarf vegetation which may intergrade at many points. In the most part, they consist of succulent or semi-succulent species less than 30 cm (1 ft.) tall, especially near the lighthouse area and westward, an a dwarf woody to semi-succulent vegetation further inland, especially along the northern cliffs (to 2 m tall). The succulent vegetation is dominated by the gregarious snowy cactus, *Mammillaria nivosa, Eupatorium corymbosum, Lithophila muscoides,* the parasite, *Cuscuta umbellata, Jacquemontia pentantha, Portulaca caulerpoides, P. pilosa, P. halimoides, Strumpfia maritima, Cassia granulata, Tephrosia cinerea, Croton discolor, Opuntia repens, Urechites lutea, Corchorus hirsutus, Erithalis fruticosa* and *Stylosanthes hamata.*

The dwarf woody association is generally less than 1 m high but may be as much as 2 m tall dominated by *Plumeria obtusa, Pilosocereus royenii, Opuntia dillenii, Erithalis fruticosa, Antirhea acutata, Reynosia uncinata, Tournefortia volubilis, Urechites lutea, Tabebuia heterophylla, Randia aculeata, Harrisia portoricensis, Euphorbia petiolaris, Melochia tomentosa, Melocactus intortus, Opuntia moniliformis, Stygmaphyllon periplocifolium* and *Crosspetzlium rhacoma.*

In areas of apparent disturbance around the lighthouse and southward, there is a narrow strip dominated by large cacti mixed with many of the above mentioned species, such as *Pilosocereus royenii, Opuntia moniliformis, O. rubescens, Stenocereus hystrix, Opuntia dillenii* (now almost exterminated by the larvae of the cactus moth, *Cactoblastis cactorum* Berg) and *Harrisia portoricensis,* which are the most conspicuous cacti of this type. Throughout the plateau there are other very small areas also dominated by cacti.

The dominant vegetation type on the Mona plateau is a semi-open xerophytic or dry forest characterized by few trees that reach 7 m or more, the rest being usually shrubby.

The poison tree, *Metopium toxiferum,* is probably the most conspicuous of the taller trees. *Tabebuia heterophylla,* when in bloom with its large pink to whitish flowers is also quite showy. The red-barked *Bursera simaruba* is also a noticeable part of the taller landscape.

Two other trees, *Ficus citrifolia* and *Clusia rosea*, when growing on the walls of deep holes also reach larger sizes. Of the many species making up the shrubby tree growth, *Coccoloba microstachya* is by far the dominant species.

An outstanding feature of the plateau is the sinks or "bajuras" where due to the red, deep soil, and the higher moisture content, the trees reach their largest sizes. Many species are more than 10 m high and over 1 m in diameter. The size of each depression governs the number, density and deciduousness of its species. Small depressions with little to no soil, for example, may be dominated by the very large-trunked trees, *Pisonia albida*. On the other hand, a rather small depression less than one acre, could be dominated by the more mesic species, *Dipholis salicifolia, Mastichodendron foetidissimum* and *Coccoloba diversifolia*. The larger depressions such as La Bajura de los Cerezos, with its deep soil and high moisture level develops a mesic forest with 30 or more tree species some with trunk diameters of 1.5 m or more and about 14 m in height. One buttressed, *Dipholis salicifolia* measured 2 m in diameter and 15 m high.

The following species were found only in sinks or cliff bases: *Cordia collococa, Dipholis salicifolia, Psychotria nutans, Jatropha multifida, Mastichodendron foetidissimum, Calyptranthes pallens, Guapira longifolia, Samyda dodecandra, Chlorophora tinctoria, Antirhea lucida, Opuntia antillana, Vanilla barbellata* (actually between two sinks), *Chiococca alba, Trichostigma octandrum, Callisia repens, Tillandsia polystachya, T. setacea, Rauvolfia nitida,* and *Morisonia americana*. The moist ecotone between the sinks and the plateau is much more characteristic of the plateau, but much denser and with more epiphytes. Also the dense shrub layer of *Phyllanthus epiphyllanthus,* which is literally covered by the epiphytic bromeliad, *Tillandsia recurvata*. Here, the rare orchid, *Vanilla barbellata,* was found.

RARE INDIGENOUS PLANTS OF MONA

Abutilon americanum
Acrostichum aureum
Adiantum fragile
Argythamnia fasciculata
Bacopa monnieri
Bucida buceras
Caesalpinia melanosperma
Calyptranthes pallens
Cardiospermum halicacabum var. *microcarpum*
Cassia aeschynomene
Cassia diffusa
Cassia grammica
Catesbaea melancarpa
Celtis trinervia
Chamaesyce cowellii
Chamaesyce monensis
Chamaesyce turpinii
Chlorophora tinctoria
Chrysophyllum oliviforme
Clerodendrum aculeatum
Coccoloba krugii
Coccoloba krugii × *uvifera*
Coccoloba venosa
Colubrina elliptica
Cordia collococa
Cordia globosa
Cordia stenophylla
Croton humilis
Cuscuta americana
Cuscuta umbellata
Cyclopeltis semicordata
Cynanchum anegadense
Cynanchum monense
Cypselea humifusa
Desmodium procumbens
Dipholis salicifolia
Domingoa haematochila
Duranta repens
Erythroxylon rotundifolium
Eugenia monticola
Eupatorium oteroi
Evolvulus convolvuloides
Evolvulus nummularius
Exothea paniculata
Ficus stahlii
Forestiera eggersiana
Forestiera rhamnifolia
Forestiera segregata
Furcraea tuberosa
Guapira discolor
Guapira longifolia
Guettarda elliptica
Guettarda krugii
Hylocereus trigonus
Ipomoea microdactyla
Ipomoea solanifolia
Jacquemontia cayensis
Justicia periplocifolia
Krameria ixina
Laguncularia racemosa
Lantana urticifolia
Lonchocarpus domingensis
Malpighia coccigera
Malpighia setosa
Mastichodendron foetidissimum
Morisonia americana
Nephrolepsis exaltata
Opuntia antillana
Pancratium declinatum
Pavonia spinifex
Pectis carthusianorum
Peperomia humilis
Phyllanthus pentaphyllus ssp. *polycladus*
Pilea margarettae
Pilea tenerrima
Pluchea carolinensis
Pluchea odorata
Portulaca teretifolia
Pseudophoenix sargentii ssp. *saonea*
Psychotria microdon
Psychotria nervosa
Psychotria nutans
Pityrogramma calomelanos
Rhizophora mangle
Rhynchosia reticulata
Roystonea borinquena
Samyda dodecandra
Scutellaria havanensis
Solanum erianthum
Solanum persicifolium
Spiranthes lucayana
Tillandsia polystachya
Tillandsia setacea
Tillandsia valenzuelana
Tillandsia usneoides
Vernonia sericea
Wedelia lanceolata
Zanthoxylum punctatum

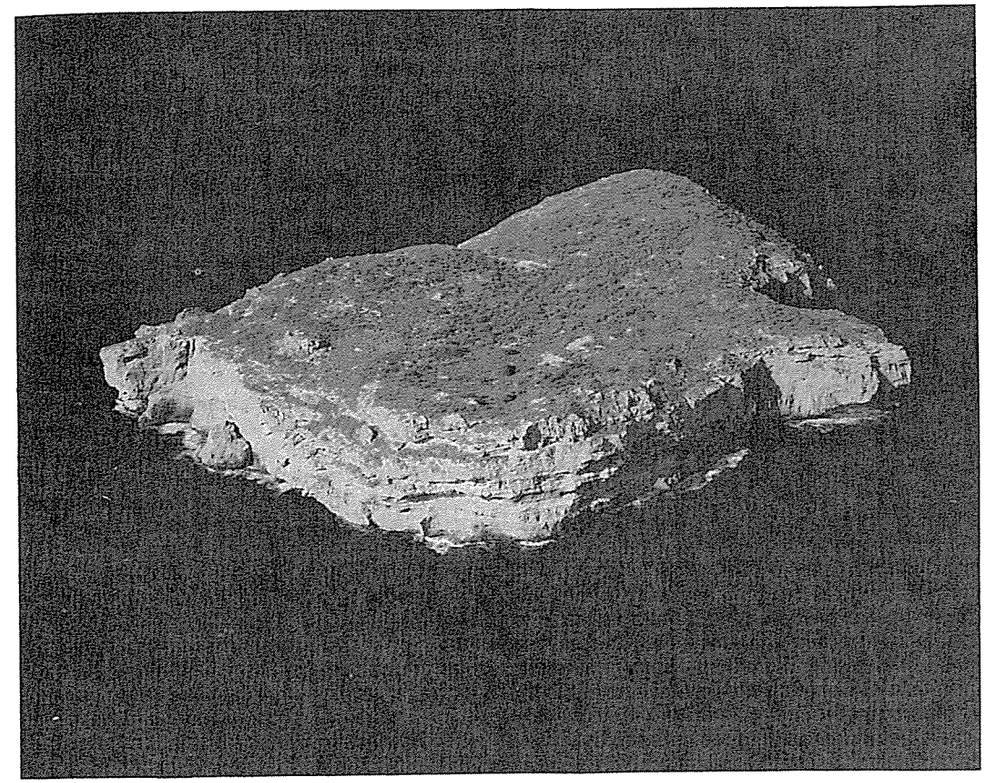

FIG. 3—The very small and almost inaccessible Monito Island which lies at a distance of 3.1 miles west of Cabo Barrio Nuevo on the northwest corner of Mona Island.

THE VEGETATION OF MONITO ISLAND

Monito is a limestone island undercut by strong currents and swells, surrounded by cliffs, its highest area being on the eastern and northern sides, tapering south and west (fig. 3). At the base of the cliff on the northeastern side there are few trees of *Ficus citrifolia* which are the largest on the island, from 1 to 5 m in height. The second largest tree species is *Guapira discolor,* from 2 to 4 m in height. The rocky, creviced or fissured areas are covered by the spiny *Pithecellobium unguis-cati* and *Capparis flexuosa*. The upper rocky ridges are dominated by the also spiny, *Lycium tweedianum* var. *chrysocarpum*. Just below this, on the eastern side there is a large open area in which species of *Croton, Eupatorium, Tournefortia* and *Melochia* abound. The endemic cactus *Harrisia portoricensis* is more common on the east side. The most abundant plant of Monito is *Capparis flexuosa,* which is usually found in dense tangles 0.9 to 1.2 m high, often growing to over 2 m on the south and western parts of the island.

The grassy areas are mostly composed of *Paspalum laxum, Setaria setosa* and *Trichachne insularis*.

Considering the very small size of Monito Island, it has two plant species which occur there and are not present in Mona itself: *Plumbago scandens* and *Lycium tweedianum* var. *chrysocarpum*. This last one does not even occur in Puerto Rico nor in any of its nearby islands. It is a species present in six islands of the Bahamas group and Anegada.

PLANTS OF MONA AND MONITO ISLANDS

PHYLUM—SPERMATOPHYTA

Class Monocotyledones

Subclass Calyciferae

COMMELINACEAE

Callisia repens (Jacq.) L.
Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." On the plateau, March 1944, *Chardón and Otero 846*[4]; Los Cerezos, April 1962, *Woodbury* M-203. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, throughout the West Indies from Cuba to Trinidad and continental tropical America.

* **Commelina diffusa** Burm.f.[5]
C. longicaulis Jacq.—[6] Noted by the authors as a weed on the coastal plain, from Sardinera to Uvero, April 1962 and February 1968. RANGE: Puerto Rico, Vieques, the U.S. Virgin Islands; West Indies, Bermuda, Florida, continental tropical America and Old World tropics.

† **Commelina elegans** Kunth[7]
C. virginica L.—Listed by Britton in 1915 (3) as "frequent on the coastal plain." On plateau, trail to Gato Cave, July 20, 1944, *Chardón and Otero* 844; Sardinera, March 7, 1944, *Chardón and Otero* 845. MONITO ISLAND, frequent, June 9, 1969, *Kepler* Mt.-3; July 19–20, 1973. *Woodbury* et al. Mt.-31. RANGE: Puerto Rico, Desecheo, Vieques, St. Thomas, St. Croix; Tortola, Anegada, West Indies, Bermuda, southeastern United States and continental tropical America.

BROMELIACEAE

* **Tillandsia fasciculata** Sw.
Noted by Woodbury at Sardinera and Los Cerezos, April 1962; again at Sardinera, February 1968 by Woodbury, Martorell and García. RANGE: Puerto Rico, Vieques, St. Thomas, St. John; Florida, West Indies and continental tropical America.

* **Tillandsia polystachya** (L.) L.
Noted by Woodbury at Sardinera and Los Cerezos, April 1962; at Sardinera, on the coastal plain, February 1968, *Woodbury, Martorell and García* M-212. RANGE: Puerto Rico, from Guadeloupe to St. Vincent, Florida, West Indies, Central and South America.

Tillandsia recurvata (L.) L.
Listed by Britton in 1915 (3) as "common on trees and shrubs." On the limestone plateau, Cerezos trail, March 1944, *Chardón and Otero* 842. Noted by Woodbury at Los Cerezos and on the Uvero trail on the coastal plain, common on trees, April 1962; at Sardinera, February 1968, *Woodbury, Martorell and García* M-140. RANGE: Puerto Rico, Desecheo, U.S. Virgin Islands; West Indies south to Martinique, southern United States, from Mexico south to Chile and Argentina.

* **Tillandsia setacea** Sw.
Tillandsia tenuifolia of authors, not of Linnaeus. Noted by Woodbury at Sardinera and Los Cerezos, April 1962; collected at Los Cerezos on the plateau, *Woodbury* M-302, June 1–4, 1972; also noted by Woodbury, Martorell and García at Sardinera, February 1968. RANGE: Puerto Rico, Greater Antilles, Florida, Mexico to El Salvador, Venezuela and northern Brazil.

* **Tillandsia usneoides** (L.) L.
Dendropogon usneoides (L.) Raf.—Noted by Woodbury at Sardinera and Los Cerezos, April 1962, rare, local. RANGE: Puerto Rico, U.S. Virgin Islands; Greater Antilles; Lesser Antilles from St. Martin, Antigua, south to Trinidad; Florida, from Virginia to Texas; south to Chile and Argentina.

Tillandsia utriculata L.
Listed by Britton in 1915 (3) as "common on trees and rocks." On limestone plateau, trail to Gato Cave, July 1944, *Chardón and Otero* 843. Noted by Woodbury at Sardinera as common on trees and all over the plateau and coastal cliffs, April 1962; at the lighthouse area, February 1968, *Woodbury, Martorell and García* M-141. RANGE: Puerto Rico, Desecheo, St. Thomas, St. Croix; the West Indies, southeastern United States, Mexico, British Honduras and Venezuela.

* **Tillandsia valenzuelana** A. Rich.
Tillandsia sublaxa Baker—Noted by Woodbury at Los Cerezos, April 1962, on plateau depressions, rare, very local. RANGE: Puerto Rico, Vieques; Greater Antilles, Florida, southern Mexico to northern South America.

Subclass Corolliferae

LILIACEAE

* **Aloe vera** (L.) Burm.f.
A. vulgaris Lam., *A. barbadensis* Mill. On trail from Uvero to lighthouse and common at the lighthouse area, a species introduced and planted in Mona. Noted by Woodbury, Martorell and García, February 1968. RANGE: Native of the Mediterranean region but planted in Puerto Rico, Vieques, U.S. Virgin Islands; Bermuda, West Indies, Florida, Central and South America.

PALMACEAE

Cocos nucifera L.
Listed by Little in 1955 (16) saying that probably the species was introduced into Mona before 1900. The coconut palm was introduced into Puerto Rico in 1549 from Cabo Verde, Africa, by a prebendary named Don Diego Lorenzo (9). Many palms noted by the authors at Sardinera, Uvero and the lighthouse area on February 1968. RANGE: Native of the Old World tropics, introduced into the New World and now occurring in all tropical insular and coastal regions.

Phoenix dactylifera L.
Listed by Little in 1955 (16): few date palms introduced and cultivated at Sardinera, but are not spreading. Noted by Woodbury, Martorell and García at Sardinera, near La Cueva del Portugués, February 1968. RANGE: Native of Africa, introduced into the New World for its valued fruit, occasionally planted in Puerto Rico, the U.S. Virgin Islands and in other tropical and subtropical areas of continental and insular America.

Pseudophoenix sargentii H. Wendl. ssp. **saonae** (Cook)
P. sargentii H. Wendl.—Listed by Little et al. in 1974 (18): "a lone palm of this species was seen on the coastal plain forest near sea level at the west end of Mona. Except for a record from Dominica, this is the eastern limit of range, an extension about 40 mi from Saona Island at the southeast coast of the Dominican Republic." Two more palms were found by Woodbury, Martorell and García in February 1968, but in Woodbury's last trip to Mona, on March 1974, all three palms were dead, two of which their tops were apparently destroyed by man. This palm species is not present in Puerto Rico nor the U.S. Virgin Islands. RANGE: Bahamas, Cuba, Hispaniola, Mona and Dominica (?) according to Glassman (12).

Roystonea borinquena O. F. Cook
Listed by Little in 1955 and 1964 (16, 17) as introduced into Mona, but not increasing in numbers. Noted by Woodbury, April 1962, several palms near cliffs at Sardinera. RANGE: Native to Puerto Rico and the U.S. Virgin Islands; introduced elsewhere as an ornamental.

Sabal causiarum (O. F. Cook) Beccari
Listed by Little in 1955 (16): grove of fan palms on the coastal plain northwest of Uvero, perhaps planted before 1900. The largest are over 25 ft high and are reproducing. RANGE: This palm species is endemic to Puerto Rico.

Thrinax morrisii H. Wendland
Listed by Britton in 1915 (3) as "apparently this species, but determined from leaves only. Rare in thickets on the coastal plain, and not found elsewhere in flower nor in fruit." At the coastal plain near Uvero, May 24, 1944, *Chardón and Otero* 841. Listed by Little in 1955 (15). Noted by Woodbury, Martorell and García, April 15–17, 1962 and February 22–24, 1968, at Sardinera. This palm has been confused in the past with other related species, namely: *T. microcarpa* Sarg., *Simpsonia microcarpa* (Sarg.) O. F. Cook, *T. keyensis* Sarg., *T. ponceana* O. F. Cook, *T. praeceps* O. F. Cook, *T. bahamensis* O. F. Cook, *T. punctulata* Beccari and *T. ekmani* Burret. R. W. Read's monograph on the genus *Thrinax* (24) clarifies the nomenclatorial status of this species. RANGE: Puerto Rico, Vieques; Lesser Antilles, Turks and Caicos (Bahama Islands), Haiti, Cuba and Florida.

AMARYLLIDACEAE

* **Crinium zeylanicum** (L.) L.
Cultivated at the lighthouse area in Mona as an ornamental, noted by Woodbury, February 1968. RANGE: Puerto Rico, St. Croix, St. Thomas. Native of tropical Asia, introduced and widely naturalized in Africa and America.

Pancratium declinatum Jacq.
Hymenocallis declinatum (Jacq.) M. Roem.,

[4] The names of plant collectors followed by the collection number are printed in *italics*; when annotations or field observations occur, the names are in roman.
[5] Plant names preceded by an asterisk (*) indicate new plant records for Mona Island.
[6] Plant names in *italics* are those used by Britton, Britton and Wilson, or by other authors, which are now in synonymy. Plant names in **boldface roman** are the current and accepted names.
[7] Plant names preceded by a dagger (†) indicate that the species occurs on Monito Island. All records from this locality identified by the letters *Mt.* followed by a collection number are new records, since this is the first time they are listed in botanical literature.

H. expansa Herb.—Listed by Britton in 1915 (3) as "frequent on coastal sands." On plateau, trail to Los Cerezos, August 1944, *Chardón, Otero and Beatty* 1682. Noted by Woodbury also on plateau and beach near Uvero, rare and local, April 1962. RANGE: Puerto Rico, Culebra, U.S. Virgin Islands; from St. Kitts to Montserrat; Bermuda and Bahamas.

AGAVACEAE

* **Agave sisalana** Perrine
On plateau, trail to Gato Cave, March 1944, *Chardón and Otero* 847. Noted by Woodbury at Sardinera and on the cliffs at Uvero beach; also common at the lighthouse area, April 1962. RANGE: Native of Yucatán (Mexico), naturalized in the West Indies and Florida, introduced into Puerto Rico by the Mayagüez Experiment Station in 1902, later into Mona, but without exact date.

Furcraea tuberosa (Mill.) Ait.f.
Listed by Britton in 1915 (3) as "in the coastal plain between Sardinera and Uvero, probably introduced from Puerto Rico." Noted by Woodbury at Los Cerezos area, April 1962. Adams (2) records this species as *Furcraea hexapetala* (Jacq.) Urban, but until further studies are made the former name of *F. tuberosa* should be kept. RANGE: Puerto Rico, Culebra, Vieques, St. Thomas, St. Croix; Tortola, Anegada, Hispaniola to Grenada; Jamaica.

ORCHIDACEAE

Domingoa haematochila (Rchb.f.) Carabia
Domingoa hymenodes (Rchb.f.) Schltr.—Listed by Britton in 1915 (3) on small trees between Sardinera and Uvero, collected by N. L. Britton, F. Cowell and W. E. Hess, February 20–26, 1914; Los Cerezos, March 3, 1944, *Chardón and Otero* 849; again at the same locality, July 21, 1944, *Chardón, Otero and Gregory* 1677. Noted by Woodbury on trees at Uvero trail, April 1962; at Sardinera, February 1968, *Woodbury, Martorell and García* M-46. RANGE: Mona, Hispaniola and Cuba.

Epidendrum brittonianum A. D. Hawkes
Erroneously listed as *E. bifidum* Aubl., *E. papilionaceum* Vahl, *Encyclia bifida* (Aubl.) Britton and *E. papilionacea* (Vahl) Schletcher. Recorded by Britton in 1915 (3): "common on shrubs and on the ground, coastal plain and plateau." At Sardinera on the coastal plain, March 1, 1944, *Chardón and Otero* 848; on branches and trunk of trees at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-49; also at Uvero, June 1–4, 1972, *Woodbury* M-289. RANGE: Endemic to Mona Island.

Spiranthes lucayana (Britton) Cogn.
Ibidium lucayanum Britton; *Mesadenus lucayanus* (Britton) Schletcher—Listed by Britton in 1915 (3) as "on low woods in coastal plain near Sardinera." Noted by Woodbury at Los Cerezos, April 1962. RANGE: Puerto Rico; Anegada, Trinidad, Bahamas and Florida.

* **Vanilla barbellata** Reichb.f.
Noted by Woodbury on plateau and at Los Cerezos, rare, local, June 1974. RANGE: Puerto Rico; Bahamas, Cuba, Florida and elsewhere in the West Indies.

CYPERACEAE

Cyperus elegans L.
Listed by Britton in 1915 (3) as in "border of marsh in coastal plain." In lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-41. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies south to St. Lucia; Florida and continental tropical America.

Cyperus ligularis L.
Listed by Britton in 1915 (3) as "on marsh at Sardinera." On the coastal plain, Sardinera, May 23 and July 20, 1944, *Chardón and Otero* 836, 837. Also listed by González-Más (13) in January 1964 from material studied in collections made by Britton, Cowell and Hess in 1914 and those by Chardón and Otero already cited above. Noted by Woodbury in April 1962 as common at Sardinera and on the plateau, later collected at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-161. RANGE: Puerto Rico, Desecheo, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, Florida, continental tropical America and tropical Africa.

Cyperus nanus var. **subtenuis** Küekenth
C. tenuis Sw.—Listed by Britton in 1915 (3) as "occasional on coastal plain." In lighthouse area, February 1968, Woodbury, *Martorell and García* M-42. RANGE: Puerto Rico, St. Croix (ex Clarke); Greater Antilles.

† **Cyperus planifolius** L. C. Rich.
Cyperus brunneus Sw.—Listed by Britton in 1915 (3) as "common on coastal sands." On the coastal plain at Sardinera, March 1, 1944 and May 24, 1944, *Chardón and Otero* 838, 839. Noted by Woodbury, April 1962, uncommon on plateau and coastal plain. Listed by González-Más (13) from material collected by Chardón and Otero mentioned above. Frequent at MONITO ISLAND, June 19–20, 1973, *Woodbury* Mt.-22. RANGE: Puerto Rico, Icacos, Vieques, Desecheo, U.S. Virgin Islands; Anegada, West Indies south to the Grenadines and St. Vincent; Barbados; Florida and from Central America to Venezuela.

Cyperus rotundus L.
Listed by González-Más (13) in 1964 from material collected by Chardón and Otero, July 19, 1944 at Sardinera. Noted by the authors at Sardinera, rare, February 1968. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Virgin Gorda; West Indies, southeastern United States, continental tropical America; temperate and tropical regions of the Old World.

Cyperus unifolius Boeck.
C. filiformis Sw., *C. calciocola* Britton—Listed by González-Más (13) in 1964 from material collected by Britton, Cowell and Hess at Sardinera, February 21–26, 1914. RANGE: Puerto Rico, Muertos Island, St. Thomas, St. Croix; Hispaniola, Bahamas and Cuba.

* **Fimbristylis castanea** (Michx.) Vahl
F. spadicea (L.) Vahl—On margin of mangrove pool at Sardinera, Feb. 22–24, 1968, *Woodbury, Martorell and García* M-65. RANGE: Puerto Rico, St. Thomas, St. Croix; Anguilla, Martinique, Grenada, Trinidad; Greater Antilles and continental tropical America.

Fimbristylis cymosa R. Br.
F. spathacea Roth.—Listed by Britton in 1915 (3) as "on the coastal plain." On the coastal plain, Sardinera, March 5, 1944, *Chardón and Otero 840*. Listed by González-Más (13) in 1964 from material collected in Mona by Stevens in 1914 and by Chardón and Otero in 1944. On margin of mangrove pond at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-64. RANGE: Puerto Rico, Greater Antilles; St. Kitts, Antigua, Guadeloupe, Bahamas; continental tropical America and Old World tropics.

* **Fimbristylis dichotoma** (L.) Vahl
F. diphylla (Retz.) Vahl—At Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-167. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, southern United States, continental tropical America and Old World tropics.

Scleria lithosperma (L.) Sw.
Listed by Britton in 1915 (3) as "frequent on the coastal plain and plateau." Noted by Woodbury at Los Cerezos, April 1962. Recorded by González-Más (13) at Mona, but not giving any other details. RANGE: Puerto Rico, Muertos Island, Vieques, St. Thomas, St. Croix; Virgin Gorda, West Indies, Florida, continental tropical America and Old World tropics.

GRAMINEAE (POACEAE)

Aristida adscencionis L.
A. bromoides Kunth—Listed by Britton in 1915 (3) as "common on the coastal plain." Recorded by Hitchcock (14) at Mona Island, *Hess* 437. On the plateau, trail to Gato Cave and on trail to Cerezos, March 3 and July 20, 1944, *Chardón and Otero* 818, 819; on plateau east of Uvero, February 1968, *Woodbury, Martorell and García* M-10. The grass is common at Sardinera, along the Uvero trail; on the plateau and at the west end of the Island. RANGE: Puerto Rico, Desecheo, the U.S. Virgin Islands; Antigua, Montserrat, Guadeloupe, Martinique; Bonaire, Curaçao, Ascensión; Hispaniola, Jamaica, Bahamas; southern United States, Mexico and continental tropical America.

Cenchrus echinatus L.
Listed by Britton in 1915 (3) as "common on the coastal plain and sand dunes." At Playa de Pájaros, March 4, 1944, *Chardón and Otero* 816. Noted by Woodbury, Martorell and García at Sardinera, rare, February 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Vieques, Culebra, U.S. Virgin Islands, Tortola, Virgin Gorda, southern United States, West Indies, Bermuda, continental tropical America and Old World tropics.

Cenchrus incertus N. A. Curtis
C. carolinianus Walt.; *C. pauciflorus* Benth.—Recorded by Britton in 1915 (3). At Sardinera, March 1 and 24, 1944, *Chardón and Otero* 815, 817. At Sardinera, common, February 22–24, 1968, *Woodbury, Martorell and García* M-21. In the lighthouse area, June 1–4, 1972, *Woodbury* M-292. RANGE: Puerto Rico, Muertos Island, Vieques, St. Thomas; West Indies, United States south to Argentina.

Cenchrus myosuroides Kunth
Listed by Britton in 1915 (3) as "frequent in cultivated grounds at the coastal plain." Recorded by Hitchcock (14) at Mona Island, *Hess* 441. At Playa de Pájaros, March 4, 1944, *Chardón and Otero* 831; at Sardinera, May 15, 1947, *Chardón, Otero and González-Más* 1904; at the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-

194. RANGE: Puerto Rico, Hispaniola, Cuba, southeastern United States and continental tropical America.

Chloris barbata Sw.
C. inflata Link, *C. paraguaiensis* Steud.—Listed by Britton in 1915 (3) as "on the coastal plain, Sardinera." At Sardinera, March 4, 1944, *Chardón and Otero* 824; at Sardinera and lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-23. RANGE: Puerto Rico, Vieques, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, continental tropical America and Old World tropics.

Chloris petraea Sw.
Eustachys petraea (Sw.) Desv.—Recorded by Britton in 1915 (3): "common on coastal plain and sands." Listed by Hitchcock in 1936 (14) from Mona Island, *Hess* 446. On the coastal plain and Uvero, March 2, 1944 and May 5, 1944, *Chardón and Otero* 826, 825. Noted by Woodbury at Sardinera, April 1962. RANGE: Puerto Rico, Vieques; Greater Antilles, Trinidad, Florida, Bermuda and continental tropical America.

* **Cynodon dactylon** (L.) Pers.
Capriola dactylon (L.) Kuntze—At Sardinera, May 23, 1944, *Chardón and Otero* 823; in same locality, in 1962 and 1968, *Woodbury, Martorell and García* M-40. RANGE: Puerto Rico, Virgin Islands; South and Central United States, West Indies, Bermuda, continental tropical America; in warm and temperate regions of the World.

Dactyloctenium aegyptium (L.) Beauv.
Listed by Britton in 1915 (3) "in cultivated ground, coastal plain." At Sardinera, March 1 and July 19, 1944, *Chardón and Otero* 828, 829; at the lighthouse area and Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-43. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Anegada, West Indies, southern United States, continental tropical America, in warm and temperate regions of the Old World.

* **Digitaria ciliaris** (Retz) Koeler
D. adscendens (Kunth) Henr., *D. sanguinalis* of Hitchcock, not (L.) Scopoli, *Panicum ciliare* Retz, *P. adscendens* Kunth, *Syntherisma sanguinalis* (L.) Dulac.—On the coastal plain, at airstrip, July 20, 1944, *Chardón, Otero and Gregory* 802; at Sardinera and lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-45. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda; widely distributed in temperate and tropical regions of the World.

Digitaria horizontalis Willd.
Syntherisma digitata (Sw.) Hitchc., *S. digitatum* (Sw). Hitchc.—Listed by Britton in 1915 (3) as "frequent in cultivated ground, coastal plain." At Sardinera, May 18, 1947, *Chardón and Otero* 1907. Noted by Woodbury, Martorell and García at Sardinera, February 22–24, 1968. RANGE: Puerto Rico, Icacos, Culebra, Vieques, St. Thomas, St. Croix; Tortola, West Indies, Florida; continental tropical America and Old World tropics.

Eleusine indica (L.) Gaertn.
Recorded by Britton in 1915 (3): "cultivated ground in coastal plain." At Sardinera, July 19, 1944, *Chardón and Otero* 827; at lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-48. RANGE: Puerto Rico, Icacos, Vieques, U.S. Virgin Islands; Tortola; temperate and tropical regions in both Hemispheres. Native of the Old World.

Eragrostis ciliaris (L.) R. Br.
Listed by Britton in 1915 (3): "common on coastal plain." At Sardinera, March 1 and May 26, 1944, *Chardón and Otero* 833, 832; at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-51. RANGE: Puerto Rico, Muertos Island, Vieques, Culebra, U.S. Virgin Islands; Tortola, Anegada, West Indies; Bermuda, southern United States, continental tropical America and Old World tropics.

* **Eragrostis tenella** (L.) Beauv. ex Roem. & Schult.
E. amabilis (L.) Wight and Arn.—On the coastal plain, Sardinera, March 7, 1944, *Chardón and Otero* 810; at Uvero and Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-50. A common weed. RANGE: Puerto Rico, St. John, St. Croix; Greater Antilles, from St. Kitts to Trinidad; Bahamas, southeastern United States; naturalized from the Old World tropics.

Lasciasis divaricata (L.) Hitchc.
Listed by Britton in 1915 (3) "frequent in thickets, coastal plain and plateau." On plateau, trail to Punta Capitán, March 9, 1944, *Chardón and Otero* 811; at Sardinera, June 1–4, 1972, *Woodbury* M-262; also February 22–24, 1968, *Woodbury, Martorell and García* M-89, M-131. RANGE: Puerto Rico, Muertos Island, Vieques, U.S. Virgin Islands; Tortola, West Indies, southern Florida, Central and South America.

* **Leptochloopsis virgata** (Poir.) Yates
Uniola virgata (Poir.) Griseb.—Noted by Woodbury at Sardinera, April 1962; on the plateau, February 22–25, 1968, *Woodbury, Martorell and García* M-223. RANGE: Puerto Rico, Desecheo, Vieques, St. Thomas, Little St. James Island; Saba, Bahamas and Greater Antilles.

* **Oplismenus hirtellus** (L.) Beauv.
At Los Cerezos, June 1–4, 1972, local, rare, *Woodbury* M-213, M-309. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, southern United States, Bermuda, from Mexico to Argentina, warm parts of Africa.

Panicum adspersum Trin.
Listed by Britton in 1915 (3) as "in moist soil, coastal plain." Recorded by Hitchcock (14) from Mona Island, *Britton Cowell and Hess* 1761. At Sardinera, July 19, 1944, *Chardón and Otero* 809; at the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-101. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, St. John, St. Croix; Tortola, Virgin Gorda, Saba, Guadeloupe, Greater Antilles and southern United States.

* **Panicum fasciculatum** Sw.
Noted by Woodbury at Sardinera, rare, June 1974. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, southeast United States to South America.

Panicum maximum Jacq.
Listed by Britton in 1915 (3) as "frequent on the coastal plain." On plateau, trail to Gato Cave, July 1944, *Chardón and Otero* 808; at Uvero and lighthouse area, Feb. 22–24, 1968, *Woodbury, Martorell and García* M-205, M-224. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; Tortola. Native of tropical Africa, now widely spread in the tropics.

Panicum muticum Forsk.
P. barbinode Trin.—Listed by Britton in 1915 (3) as in "sandy soil, Playa de Pájaros." Noted by Woodbury in the moist coastal plain, local, April 1962. RANGE: Puerto Rico, Culebra, Vieques, St. Croix; Tortola, West Indies, Bermuda, southern United States and continental tropical America. A native of South America.

Pappophorum pappiferum (Lam.) Kuntze
P. alopecuroideum Vahl, *P. laguroideum* Schrad.—Listed by Britton in 1915 (3) in "wet soil, coastal plain, between Sardinera and Uvero." At Sardinera, July 19, 1944, *Chardón and Otero* 830. Noted by Woodbury on the coastal plain, uncommon, April 1962. Recorded by Hitchcock in 1936 (14) from Mona Island, *Hess* 444. RANGE: Puerto Rico, Desecheo, St. Thomas; St. Eustatius, Guadeloupe, Dominica, Martinique, Trinidad; Cuba and continental tropical America.

Paspalum blodgettii Chapm.
P. simpsoni Nash—Listed by Britton in 1915 (3) as "collected by professor Stevens, not found by us." At Sardinera, March 1, 1944, *Chardón and Otero* 805, 806; noted by Woodbury in the plateau, local, April 1962. RANGE: Puerto Rico, Greater Antilles, Florida, Bahamas, Mexico and Honduras.

Paspalum caespitosum Flüegge
Listed by Britton in 1915 (3) as "frequent on the coastal plain and plateau." Recorded by Hitchcock (14) from Mona Island, *Britton, Cowell and Hess* 1656, 1839; *Hess* 435, 436. At Sardinera and lighthouse area, December 11–12, 1971, *Woodbury, Martorell and García* M-103, M-247. RANGE: Puerto Rico, St. Thomas (ex Krebs); Bahamas, Greater Antilles, southern Florida.

* **Paspalum distichum** L.
Noted by Woodbury at Sardinera, April 15–17, 1962; in same general area, December 11–12, 1971, *Woodbury, Martorell and García* M-259. RANGE: Puerto Rico, Vieques, St. Croix; West Indies, Bermuda, United States, continental tropical America and Old World tropics.

† **Paspalum laxum** Lam.
P. glabrum Poir.—Listed by Britton and Wilson in 1923 (5). Recorded by Hitchcock in 1936 (14) from Mona Island, *Hess* 434. At Sardinera and Uvero, March 1 and 2, 1944, *Chardón and Otero* 804, 807; on the plateau near Uvero, February 1968, *Woodbury, Martorell and García* M-104. Abundant all over the plateau and Sardinera. On MONITO ISLAND, June 6, 1969 and June 19–20, 1973, *Kepler and Woodbury* Mt.-9, Mt.33. RANGE: Puerto Rico, Desecheo, Vieques, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, the West Indies, Bahamas and Florida.

* **Paspalum molle** Poir.
P. portoricense Nash—At Sardinera, May 17, 1944, *Chardón, Otero and González-Más* 1925. Noted by the authors at Sardinera and plateau; also in trail from Uvero to lighthouse, February 22–24, 1968. RANGE: Puerto Rico, Bahamas (Crooked Island). This

last record according to Hitchcock, in Britton and Millspaugh (4).

* **Paspalum rupestre** Trin.
P. leoninum Chase—On the plateau, February 22–24, 1968, *Woodbury, García and Martorell* M-222; on plateau, December 11–12, 1971, *Woodbury, Martorell and García* M-240. RANGE: Puerto Rico (western zones) and Cuba.

* **Paspalum saugetii** Chase
P. poiretti R. & S.—On the plateau, rare, December 11–12, 1972, *Woodbury* M-240. RANGE: Puerto Rico, St. Thomas (ex Krebs); Bahamas and Greater Antilles.

Paspalum vaginatum Sw.
Listed by Britton in 1923 (5). Recorded by Hitchcock from Mona Island in 1936 (14) *Hess* 439. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-180. This species is considered by Adams (2) as a synonym of *P. distichum* L., but according to Hitchcock 1951 (15) both species are different. In *P. distichum* the second glume is pubescent and the spikelets are relatively turgid, while in *P. vaginatum* the second glume and the sterile lemma are glabrous and the spikelets are flattened. RANGE: Puerto Rico, Vieques, St. Croix; Tortola, West Indies, southern United States and continental tropical America.

* **Pennisetum ciliare** (L.) Link
At Sardinera, May 15, 1947, *Chardón, Otero and González-Más* 1915; February 22–24, 1968, *Woodbury, Martorell and García* M-106. RANGE: Puerto Rico, Guatemala. Native to tropical Africa.

* **Rhynchelytrum repens** (Willd.) C. E. Hubbard
Tricholaena repens Nees—Sardinera, near airfield, July 20, 1944, *Chardón and Otero* 834; noted by Woodbury, April 15–17, 1962; at the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-145. RANGE: Introduced by the Insular Experiment Station at Río Piedras in 1922, now naturalized in many areas of Puerto Rico and nearby islands including Desecheo. Native to tropical Africa. This grass has been confused at times with its allied species *Rhynchelytrum roseum* (Nees) Stapf. and Hubbard, also native of Africa.

Setaria geniculata (Lam.) Beauv.
Chaetochloa geniculata (Lam.) Millsp. & Chase, *C. imberbis* Scribn.—Recorded by Britton in 1915 (3) as "frequent on the coastal plain." Sardinera, May 17, 1947, *Chardón, Otero and González-Más* 1921; noted by Woodbury, April 1962 and by the authors in the same area, February 22–24, 1968. RANGE: Puerto Rico, Icacos, U.S. Virgin Islands; Tortola, eastern United States, the West Indies, continental tropical America south to Argentina.

Setaria leiophylla (Ness) Kunth
Los Cerezos, February 22–24, 1968, *Woodbury, Martorell and García* M-214. A rare species in Mona. RANGE: Puerto Rico, Desecheo, Hispaniola and Antigua.

Setaria pradana (León) León
Panicum pradanum León—Recorded by Hitchcock in 1936 (14) *Hess* 455. Later listed by Logier in 1965 (19) in Mona Island.

† **Setaria setosa** (Sw.) Beauv.
Chaetochloa setosa (Sw.) Scribn., *C. caudata* (Lam.) Scribn.—Listed by Britton in 1915 (3) as "occasional on the coastal plain." Recorded by Hitchcock in 1936 in Mona Island (14) *Hess* 447. Playa de Pájaros, March 4, 1944, *Chardón and Otero* 814; limestone plateau, trail to Gato Cave, July 20, 1944, *Chardón, Otero and Gregory* 812. Noted by Woodbury, April 1962. *MONITO* ISLAND: *Woodbury, Kepler* and others, June 19–20, 1973, Mt.-17. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Florida and continental tropical America.

Setaria utowanae (Scribn.) Pilger
Panicum utowanaeum Scribn.—Listed by Britton in 1915 (3) as "frequent on the coastal plain and plateau." Recorded by Hitchcock in 1936 (14) from Mona Island, *Britton, Cowell and Hess* 1698, 1734; *Hess* 431, 457. On plateau east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-102. RANGE: Puerto Rico, Desecheo, Muertos Island; Anegada, Guadeloupe, Cuba, Hispaniola and Venezuela.

* **Sporobolus domingensis** (Trin.) Kunth
At lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-130. RANGE: Hispaniola, Jamaica, Cuba, Bahamas and Florida. This plant species was listed by Britton and Wilson in 1923 (5) from a specimen collected at Cabo Rojo by Sintenis, saying however that the plant material was immature and the determination thus doubtful. Logier in 1965 (19), page 319, says: "Omit: *Sporobolus domingensis* (Trin.) Kunth. The Cabo Rojo specimen (*Sintenis* 549) is *Sporobolus pyramidatus* (Lam.) Hitchc." Thus, *S. domingensis* so far has not been found in Puerto Rico.

* **Sporobolus indicus** (L.) R. Br.
S. poiretti (Roem. & Schult.) Hitchc., *S. berteroanus* (Trin.) Hitchc. & Chase—Coastal plain, Sardinera, July 19, 1944, *Chardón and Otero* 820; Noted by Woodbury at Sardinera and along the Uvero trail, April 1962; Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-131. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, West Indies, southeast United States south through Mexico and Paraguay. After consulting Dr. Alain H. Logier on the synonymy of this species he said: "Further studies and publications indicate that *S. indicus* includes *S. poiretti* and *S. berteroanus*. However, *S. jacquemontii* Kunth is the new name for *Sporobolus indicus* of Hitchcock and other authors, not of *indicus* (L.) R. Br."

Sporobolus pyramidatus (Lam.) Hitchc.
S. argutus (Nees) Kunth—Listed by Britton in 1915 (3) as "frequent in moist soil on the coastal plain." Recorded by Hitchcock in 1936 (14) from Mona Island, *Britton, Cowell and Hess* 178; *Hess* 453. Sardinera, May 17, 1947, *Chardón, Otero and Gonzalez-Más* 1908; noted by Woodbury at Sardinera, April 1962. RANGE: Puerto Rico, Muertos Island, St. Croix; Anegada, West Indies, southeastern United States, Mexico south to Argentina.

Sporobolus virginicus (L.) Kunth
Listed by Britton in 1915 (3) as "common in coastal sands and on the coastal plain," although with incorrect botanical citation, as: *S. virginicus* (L.) Beauv. Sardinera, May 26 and July 19, 1944, *Chardón and Otero* 821, 822; February 22–24, 1968, *Woodbury, Martorell and García* M-132. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; all tropical shores, saline soils along the coasts, eastern and southern United States, West Indies, Bermuda and continental tropical America.

† **Trichachne insularis** (L.) Ness
Valota insularis (L.) Chase, *Digitaria insularis* (L.) Mez ex Ekman—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Los Cerezos, March 3, 1944, *Chardón and Otero* 801; uncommon in the coastal plain from Sardinera to Uvero, February 22, 24, 1968 as observed by the authors. MONITO ISLAND: June 19–20, 1973, frequent, *Woodbury* Mt.-36. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Tortola, West Indies, Bermuda, continental tropical America; introduced into the Pacific islands.

CLASS DICOTYLEDONES

Subclass Polypetalae

CASUARINACEAE

Casuarina equisetifolia L.
Listed by Little in 1955 (16) saying: "The plantation of this species totaling 200 acres made by the Civilian Conservations Corps between 1937 and 1939 now contain the tallest trees on the island, up to 95 feet high and 16 inches in diameter. Not spreading from cultivation. (Introduced)." Noted in all the trips made by the authors to Mona since 1962 up to 1974. RANGE: Native of tropical Asia and Australasia, naturalized in the West Indies and elsewhere.

PIPERACEAE

Peperomia humilis (Vahl) A. Dietr.
Listed by Britton in 1915 (3) in "shaded limestone rocks near Sardinera." Noted by Woodbury near Los Cerezos, April 1962; in same area, February 22–24, 1968, *Woodbury, Martorell and García* M-207. RANGE: Puerto Rico, Vieques, Desecheo, U.S. Virgin Islands; Tortola, Antigua, Hispaniola, Florida and continental tropical America.

ULMACEAE

Celtis trinervia Lam.
Listed by Britton in 1915 (3) in "base of cliffs, Sardinera." Coastal plain, Sardinera, March 10, 1944, *Chardón and Otero* 851. Listed by Little in 1955 (16) as trees 25 feet high and 5 inches d.b.h. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-187; June 1–4, 1972, *Woodbury* M-266. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Greater Antilles and Guatemala.

MORACEAE

Artocarpus altilis (Parkinson) Fosberg
A. communis Forst.—Listed by Little in 1955 (16) as "three planted trees noted at Sardinera. (Introduced)." Also noted by Woodbury at base of cliffs, Sardinera, April 1962. RANGE: Native to the South Pacific Islands, introduced into Jamaica in 1793, and from there spread through the Antilles and other places in tropical America.

Chlorophora tinctoria Gaud.
Sardinera, March 7 and May 24, 1944, *Char-*

dón and Otero 858, 859; listed by Little in 1955 (16) as a "spreading tree 30 feet high and 6 inches or more d.b.h.; February 22–24, 1968, *Woodbury, Martorell and García* M-24; at base of cliffs, December 11–12, 1971, *Woodbury, Martorell and García* M-239. Also noted by Woodbury at Los Cerezos in April 1962. Listed by Little in 1955 (16). Some of those trees are now about 60 feet high and 14 inches in trunk diameter as noted by Woodbury in 1974. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; throughout the Lesser Antilles to Barbados and Trinidad, Bonaire and Curaçao; from Mexico to southern Brazil, Bolivia, Perú and Argentina.

† **Ficus citrifolia** F. Mill.
F. laevigata Vahl—Listed by Britton in 1915 (3) in the "coastal plain and plateau, largest at bases of cliffs." Uvero, at the coastal plain, March 2, 1944, *Chardón and Otero* 855; on plateau, trail to Gato Cave, May 25, 1944, *Chardón and Otero* 854. Listed by Little in 1955 (16) in coastal plain and plateau. In Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-63. Common on the plateau from Uvero to the lighthouse; occurring everywhere in Mona Island. MONITO ISLAND, local, rare, June 19–20, 1973 *Woodbury* Mt.-10. The largest tree species in this locality. RANGE: Puerto Rico, Desecheo, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, Florida, Mexico south to Paraguay.

Ficus stahlii Warb.
Ficus trigonata L., *F. crassinervia* Desf.—These two names have been used by other authors to synonymize *F. stahlii* but *stahlii* is a valid species by itself. Listed by Britton in 1915 (3) as "frequent along the bases of cliffs, eastern edge of the coastal plain. Trees up to 12 meters high. Determined from foliage only." At Sardinera, coastal plain, July 19, 1944 and March 2, 1944, *Chardón and Otero* 852, 857. Listed by Little in 1955 (16) as frequent at base of cliffs in Sardinera. In the coastal plain, February 22–24, 1968 and June 1–4, 1972, *Woodbury, Martorell and García* M-62, M-189, M-268. Common at base of cliffs; large trees, in 1974 about 20 meters high. RANGE: Endemic, only known from Puerto Rico and Mona Island.

URTICACEAE

* **Pilea herniarioides** (Sw.) Lindl.
In La Bajura de los Cerezos, June 1–4, 1972, rare, *Woodbury* M-321. RANGE: Puerto Rico, St. Croix; Virgin Gorda, Guadeloupe, Martinique, Greater Antilles and Costa Rica.

Pilea margarettae Britton
Listed by Britton and Wilson in January 1924 (5) as a new species from Mona Island. At foot of limestone plateau, Sardinera, March 3, 1944, *Chardón and Otero* 862; noted by Woodbury on plateau, April 1962, local, rare. RANGE: Puerto Rico, Anegada, Cuba and Jamaica, according to Britton. However, Adams (2) does not list this species from Jamaica, instead he cites: *Pilea microphylla succulenta* Griseb. from that Antillean island and from the other islands of the Greater Antilles, not mentioning at all *P. margarettae*.

Pilea microphylla (L.) Liebm.
P. trianthemoides (L.) Lindl.—Listed by Britton in 1915 (3): "frequent on coastal plain; occasional on the plateau." At Playa de Pájaros, March 4, 1944, *Chardón and Otero* 861; limestone plateau, trail from Uvero to Los Cerezos, *Chardón, Otero and Gregory* 860, July 21, 1944; at the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-111. RANGE: Eastern Puerto Rico, & Mona Island and tropical America. Until further studies are made on this genus, the authors are maintaining the original names listed by Britton and Wilson (5).

* **Pilea tenerrima** Miquel
Common on the plateau near Uvero area as noted by Woodbury in April 1962; later collected in the same locality, February 22–24, 1968, *Woodbury, Martorell and García* M-112.

POLYGONACEAE

Coccoloba diversifolia Jacq.
Coccolobis laurifolia Jacq.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Sardinera, at foot of cliff, March 2, 1944, *Chardón and Otero* 864; July 19, 1944, *Chardón, Otero and Gregory* 863. Listed by Little in 1955 (16) as common on the plateau and coastal plain. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-29; common on the coastal plain, plateau and trail to Bajura de los Cerezos. RANGE: Puerto Rico, Vieques, St. Croix; Lesser Antilles, Greater Antilles, Bahamas and Florida.

Coccoloba krugii Lindau
Listed by Little in 1974 (18) from Mona as rare. RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix, Little St. James Island, St. John; Anegada, St. Martin, Barbuda; Bahamas, Jamaica and Hispaniola. A hybrid of this species designated as *C. krugii* × *uvifera* is mentioned by Little 1974 (18)

page 150, and according to him the range is as follows: Puerto Rico, St. Croix, St. Thomas, St. John, Little St. James, Virgin Gorda (Gorda Peak), St. Eustatius and Hispaniola. In Mona both, *C. krugii* and its hybrid are mostly found along the coast and in the mahogany plantation on the coastal plain.

Coccoloba microstachya Willd.
C. obtusifolia Jacq.—This last name is not a true synonym of *C. microstachya*, but a misnomer, since *C. obtusifolia* occurs in Colombia and Venezuela and is not present in Puerto Rico. Listed by Britton in 1915 (3) incorrectly as *C. obtusifolia* as "common on the coastal plain and on the plateau." Los Cerezos, March 3, 1944, *Chardón and Otero* 865. Recorded by Little in 1955 (16) also as *C. obtusifolia*. Noted by Woodbury on plateau, April 1962. RANGE: Puerto Rico, Muertos Island, Palomino, Vieques, Culebra, U.S. Virgin Islands; Jost Van Dyke, Tortola, Virgin Gorda, Anguilla and Hispaniola.

Coccoloba uvifera (L.) L.
Coccolobis uvifera (L.) Jacq.—Listed by Britton in 1915 (3) as "common on coastal sands and rocks." At Uvero, March 2, 1944, *Chardón and Otero* 867. Recorded by Little in 1955 (16) at sandy beaches, Playa de Pájaros and southwestern coastal plain. Noted by the authors as very common along the coast from Sardinera to Uvero and at Playa de Pájaros, April 1962 and February 22–24, 1968. RANGE: Puerto Rico, Desecheo, Icacos, Palomino, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Jost Van Dyke, Anegada; from southern Florida and Bermuda through the West Indies from Cuba, Bahamas south to Trinidad, Tobago, Curaçao and Aruba; from northern Mexico to Colombia, Venezuela and the Guianas.

Coccoloba venosa L.
Coccolobis nivea Jacq.—Listed by Britton in 1915 (3) "at base of cliff, Sardinera." In coastal plain at foot of plateau, March 1, 1944, *Chardón and Otero* 868. Listed by Little in 1955 (16) as "uncommon at base of cliffs, Sardinera." Noted by the authors at base of cliffs, rare, April 1962 and February 1968. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Jost Van Dyke, Lesser Antilles from St. Martin south to Grenada, Trinidad and Tobago. Also in Hispaniola.

AMARANTHACEAE

Achryanthes indica (L.) Mill.
Centrostachys indica (L.) Standley—Listed by Britton in 1915 (3) as "frequent in cultivated ground, coastal plain." Uvero, at the coastal plain, March 2, 1944, *Chardón and Otero* 871; Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-2. RANGE: Puerto Rico, Muertos Island, Vieques, Culebra, St. Thomas, St. Croix; Tortola, Jamaica, Grand Cayman, tropical and subtropical regions of the World.

Amaranthus dubius Mart. ex Thell.
A. tristis Willd.—Listed by Britton in 1915 (3) in "waste and cultivated grounds on the coastal plain." Sardinera, March 4, 1944, *Chardón and Otero* 870; at the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-5; at Uvero, June 1–4, 1972, *Woodbury* M-287. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, U.S. Virgin Islands; Tortola, West Indies, Central and South America; tropical Africa; adventive in Europe.

* **Amaranthus viridis** L.
A. gracilis Desf.—At the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-6, M-163. RANGE: Puerto Rico, Desecheo, Muertos Island, Culebra, U.S. Virgin Islands; West Indies, southern United States, tropical and subtropical America and Old World tropics.

Celosia nitida Vahl
Listed by Britton in 1915 (3) as "frequent on the coastal plain." Sardinera, March 5, 1944, *Chardón and Otero* 869; noted by the authors at Sardinera and the coastal plain, fairly common, April 1962 and February 22–24, 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, Culebra, U.S. Virgin Islands; West Indies, Florida; from Mexico to northern South America.

Lithophila muscoides Sw.
Listed by Britton in 1915 (3) as "collected by Prof. Stevens, not found by us." Noted by Woodbury, common on the plateau at La Bajura de los Cerezos, April 1962; near the lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-92, M-225. MONITO ISLAND, June 19–20, 1973, rare, *Woodbury et al.* Mt.-38. RANGE: Puerto Rico, St. Croix; Anegada, from St. Martin south to Martinique; Bonaire, Curaçao and Aruba; Bahamas, Cuba, Hispaniola and Cayman Island.

* **Philoxerus vermicularis** (L.) Beauv.
At Playa de Pájaros, March 4, 1944, *Chardón and Otero* 884; near the seashore at Uvero, May 24, 1944, *Chardón and Otero* 883; at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-233. RANGE: Puerto Rico, Muertos Island, Vieques, St.

Thomas, St. Croix; Tortola, Virgin Gorda, Anegada; West Indies, Florida; continental tropical America and west coast of Africa.

NYCTAGINACEAE

† **Boerhaavia diffusa** L.
Boerhaavea coccinea Mill.—Listed by Britton in 1915 (3) as "common on the coastal plain." At Sardinera and Playa de Pájaros, March 1 and 4, 1944, *Chardón and Otero* 872, 873; Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-11; MONITO ISLAND, rare, June 19–20, 1973, *Woodbury et al.* Mt.-39. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Mexico through Central America south to northern South America; tropical Africa.

* **Boerhaavia erecta** L.
At Sardinera and lighthouse area, noted by Woodbury, April 1962; later collected at Sardinera February 22–24, 1968, *Woodbury, Martorell and García* M-12. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, Antigua, Barbados, Greater Antilles, Bahamas, southern United States, Bermuda, Mexico to Central and South America; West Africa and Malaya.

† **Guapira discolor** (Spreng.) Little
Torrubia discolor (Spreng.) Britton—Recorded by Little et al. in 1974 (18). Woodbury noted the species in the north-east area of Mona, near the booby colony, February 22–24, 1968, a rare species, local. MONITO ISLAND: local, June 6, 1969, *Kepler* Mt.-6; June 19–20, 1973, *Woodbury et al.* Mt.-25, Mt.-20.

Guapira fragrans (Dum.-Cours.) Little
Torrubia fragrans (Dum.-Cours.) Standley—Sardinera, July 19 and 21, 1944, *Chardón and Otero* 874, 1670; listed by Little in 1955 (16) in Sardinera, uncommon at base of cliff; noted by Woodbury in same general area, April 1962; again recorded by Little et al. in 1974 (18). RANGE: Puerto Rico, Desecheo, Culebra, St. Thomas, St. Croix; Tortola, Virgin Gorda, West Indies (except Bahamas), Central and South America.

* **Guapira longifolia** (Heimerl) Little
Torrubia longifolia (Heimerl) Britton—In sinks or depressions in central areas of Mona, June 10–12, 1974, *Woodbury* M-333. This is a very interesting record since this species is not found anywhere near the islands close to Mona. RANGE: Bahamas, Florida and Cuba. Britton and Millspaugh (4) also list the species from Jamaica, but Adams (2) does not mention it from there.

Mirabilis jalapa L.
Listed by Britton in 1915 (3) in "waste grounds; uncommon." The species however is not recorded from Mona in Britton and Wilson's 1925 paper (5). Not seen by authors during their visits to Mona Island. RANGE: Puerto Rico, Vieques, St. Thomas, St. Croix; Tortola, West Indies, Florida, Bermuda, Texas to Central and South America.

Pisonia albida (Heimerl) Britton
Erroneously listed by Britton in 1915 (3) as *Pisonia subcordata* Sw., (based on sterile material collected at Mona) but 10 years later when Britton and Wilson published their Part II of the Flora of Porto Rico and the Virgin Islands in 1925 (5) the error was corrected. On plateau, trail to Gato Cave, March 7, 1944, *Chardón and Otero* 877; trail to Punta Capitán, March 9, 1944, *Chardón and Otero* 877; Sardinera, July 19, 1944, *Chardón and Otero* 874. Listed by Little in 1955 (16) as a dominant species in the western part of the plateau; n plateau, June 1–4, 1972, *Woodbury* M-301. An unusual tree with several trunks developing from a large base to 5 feet in diameter and 35 feet high. RANGE: Endemic, Puerto Rico, Muertos Island and Mona.

PHYTOLACCACEAE

Petiveria alliacea L.
Listed by Britton in 1915 (3) as "occasional in thickets in the coastal plain." At Sardinera, March 1, 1944, *Chardón and Otero* 881; weedy, local, at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-107. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Tortola, West Indies, Florida; from Mexico to Argentina; now established in some regions of tropical Asia and Africa.

† **Rivina humilis** L.
Listed by Britton in 1915 (3) as "common on the coastal plain and plateau." At Uvero and Sardinera, March 2 and May 22, 1944, *Chardón and Otero* 882, 887; Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-124. MONITO ISLAND: frequent, June 6, 1969, *Kepler* Mt.-5; June 19–20, 1973, *Woodbury et al.* Mt.-15. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies,

Florida, from Texas to Argentina; naturalized in tropical Asia.

Trichostigma octandrum (L.) J. Walter
Listed by Britton in 1915 (3) as "frequent on the talus, vicinity of Sardinera, forming vines 20 meters long with trunks up to 1.5 decimeters in diameter." Sardinera, at foot of limestone plateau, March 1 and 5, 1944, *Chardón and Otero* 879, 880; same general area, February 22–24, 1968, *Woodbury, Martorell and García* M-146. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, Florida; Mexico to Brazil and Perú.

PORTULACACEAE

* **Portulaca caulerpoides** Britton & Wilson
On the trail from Playa de Pájaros to the lighthouse, March 4, 1944, *Chardón and Otero* 1809; on limestone plateau above Gato Cave, May 16, 1944, *Chardón, Otero and González-Más* 1917; in lighthouse area, growing in calcareous soils, common, February 22–24, 1968, *Woodbury, Martorell and García* M-71, M-195. RANGE: Limestone rocks at Muertos Island south of Ponce, Puerto Rico and now on Mona Island. Endemic.

* **Portulaca halimoides** L.
Noted by Woodbury in lighthouse area, April 1962, later collected, February 22–24, 1968, *Woodbury, Martorell and García* M-116. RANGE: Puerto Rico, U.S. Virgin Islands; Virgin Gorda, Anegada, from St. Martin to Guadeloupe, Bonaire, Curaçao and Aruba, Greater Antilles; Mexico to Venezuela.

† **Portulaca oleracea** L.
Listed by Britton in 1915 (3) in "sandy soil, Playa de Pájaros." Common in lighthouse area, also at Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-117, M-169. MONITO ISLAND: rare, June 19–20, 1973, *Woodbury* Mt.37. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, U.S. Virgin Islands; Tortola, Cuba to Trinidad through the Antillean chain, South America.

* **Portulaca pilosa** L.
On plateau, trail to Los Cerezos, March 2, 1944, *Chardón and Otero* 886; in same locality, March 3, 1944, *Chardón and Otero* 888; Sardinera, March 7, 1944, *Chardón and Otero* 887; also, July 19, 1944, *Chardón and Otero* 1675. Noted by the authors, at Sardinera, April 1962 and February 22–24, 1968. RANGE: Puerto Rico, St. Thomas, St. Croix; through the Antillean chain from Cuba to Trinidad, southeastern United States, Mexico to South America.

* **Portulaca quadrifida** L.
In the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-226, uncommon. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola; from Cuba to Trinidad; South America. Native of tropical Asia.

Portulaca rubricaulis Kunth
Portulaca phaeosperma Urban—Listed by Britton in 1915 (3) "moist soil, coastal plain and plateau." Sardinera, March 11, 1944, *Chardón and Otero* 889; noted by Woodbury in lighthouse area and plateau, April 1962. RANGE: Puerto Rico, St. Thomas, St. Croix; Virgin Gorda, Greater Antilles, Curaçao, Bahamas and Florida.

* **Portulaca teretifolia** Kunth
P. poliosperma Urban—Noted by Woodbury on the plateau, rare, June 1–4, 1972. RANGE: Puerto Rico, St. Martin, Curaçao and Cuba.

† **Talinum paniculatum** (Jacq.) Gaertn.
Listed by Britton in 1915 (3) in the "coastal plain, Sardinera." At Sardinera and Uvero, May 2 and July 21, 1944, *Chardón and Otero* 1807, 885; noted by Woodbury at Los Cerezos, April 15–17, 1962. MONITO ISLAND: June 6, 1969, frequent, *Kepler* Mt.-11; June 19–20, 1973, *Woodbury et al.* Mt.-16. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Virgin Gorda, Tortola, West Indies (Cuba to Margarita); southern United States and continental tropical America.

AIZOACEAE

* **Cypselea humifusa** Turp.
In depressions at Los Cerezos, very rare, June 1–4, 1972, *Woodbury* M-321. RANGE: St. Thomas, Water Island; Anegada, Guadeloupe, Margarita, Hispaniola, Cuba, southern Florida and California.

Sesuvium portulacastrum L.
Listed by Britton in 1915 (3) as "common on coastal rocks and sands." At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-151; June 1–4, 1972, *Woodbury* M-254.

* **Trianthema portulacastrum** L.
Noted by Woodbury in lighthouse area, April 1962; Sardinera and lighthouse area, rare, weedy, February 22–24, 1968, *Woodbury, Martorell and García* M-143, M-227. RANGE: Puerto Rico, Desecheo, Vieques, St.

Thomas, St. Croix; Tortola, Jamaica; from Cuba to Trinidad, Margarita, Bonaire, Curaçao and Aruba, continental tropical America and Old World tropics.

CACTACEAE

† **Harrisia portoricensis** Britton
Cereus portoricensis (Britton) Urban—Listed by Britton in 1915 (3): "common on the talus and on the plateau." Listed by Little in 1955 (16) at the eastern part of plateau and Playa de Pájaros, becoming 15 feet high; noted by the authors on the plateau, April 1962 and February 22–24, 1968. MONITO ISLAND: noted by Woodbury et al., June 19–20, 1973, common in this locality. RANGE: Puerto Rico (although not collected by modern botanists) and Mona; endemic.

* **Hylocereus trigonus** (Haw.) Safford
Noted by the authors at Sardinera and on the cliffs, uncommon, April 1962 and February 22–24, 1968. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Florida, Virgin Gorda, St. Martin, Saba, St. Eustatius, Hispaniola.

† **Mammillaria nivosa** Link
Coryphantha nivosa (Link) Britton, *Neomammillaria nivosa* (Link) Britton & Rose—Listed by Britton in 1915 (3) as "very abundant on the plateau." Common along the lighthouse trail from Uvero east, April 1962 and February 1968 as noted by the authors. MONITO ISLAND: noted by Woodbury June 19–20, 1973, local. RANGE: Desecheo, Culebra, Buck Island and Flat Cays; St. Thomas, St. John, Little St. James Island, Tortola, Bahamas and Antigua. Not known from Puerto Rico.

Melocactus intortus (Mill.) Urban
Cactus intortus Mill.—Listed by Britton in 1915 (3) as "locally common on the plateau." Scattered along the lighthouse trail area to Playa de Pájaros as noted by the authors, April 1962 and February 1968. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, from St. Martin to Antigua, Bahamas.

* **Opuntia antillana** Britton & Rose
Noted by Woodbury in sinks at the plateau and at the coastal plain, very rare, June 1–4, 1972. RANGE: Puerto Rico, St. Thomas, St. Croix, St. Kitts, Hispaniola.

† **Opuntia dillenii** (Ker-Gawl.) Haw.
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Noted at Sardinera and plateau, very common, plants attacked by the cactus moth, *Cactoblastis cactorum* (Berg), April 1962 and February 22–24, 1968. MONITO ISLAND, common, noted by Woodbury, June 19–20, 1973. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, U.S. Virgin Islands; West Indies, Bermuda, Florida; eastern coasts of Mexico and northern South America.

Opuntia moniliformis (L.) Haw.
Consolea moniliformis (L.) Britton—Listed by Little in 1974 (8). Noted by the authors in the central part of the plateau, near depressions, rare, February 22–24, 1968 and June 1–4, 1972. RANGE: Puerto Rico, Desecheo and Hispaniola.

† **Opuntia repens** Bello
Incorrectly listed by Britton in 1915 (3) as *O. taylori* Britton, which is a Dominican Republic species not present within the limits of our flora. The correct citation of the name was given later by Britton and Wilson in 1924 (5). On plateau, trail to Gato Cave, July 20, 1944, *Chardón and Otero* 1002; common on plateau; abundant along lighthouse trail from Uvero east, as noted by the authors, April 1962 and February 22–24, 1968. MONITO ISLAND, noted by Woodbury, common, June 19–20, 1973. RANGE: Puerto Rico, Desecheo, Muertos Island, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda. An endemic species to this particular area.

† **Opuntia rubescens** Salm-Dyck
O. catacantha Link & Otto, *Consolea rubescens* (Salm-Dyck) Lemaire—On plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 1003. Recorded by Little at Mona (?) in 1955 and 1964 (16, 17) saying: "Though referred by Britton to this species, the plants at Mona resemble *O. moniliformis* (L.) Haw. [(*Consolea moniliformis* (L.) Britton], a closely related species of Hispaniola and Desecheo, which has numerous areolae on the joints." Common everywhere on the plateau and at Sardinera as noted by the authors in April 1962 and February 22–24, 1968. RANGE: Puerto Rico, Icacos, Vieques, Culebra, U.S. Virgin Islands; Tortola, from St. Martin to Guadeloupe. MONITO ISLAND, common, as noted by Woodbury, June 19–20, 1973.

Pilosocereus royeni (L.) Byles & Rowley
Cephalocereus royeni (L.) Britton & Rose—Listed by Britton in 1915 (3): "common on the plateau." On trail to Gato Cave, May 25, 1944, *Chardón and Otero* 1001. Listed by Little in 1955 (16) as common at east end of plateau, columnar cactus trees becoming 5 m high. Noted by the authors mostly around the lighthouse area and cliffs on the plateau, April 1962 and February 1968 (Fig. 4). RANGE: Puerto Rico, Desecheo, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, Jost Van Dyke, St. Kitts and Antigua.

Stenocereus hystrix (Haw.) Buxb.
Lemaireocereus hystrix (Haw.) Britton & Rose, *Cereus hystrix* Haw.—Listed at Mona by Little in 1955 (16). This columnar cactus 3 meters high is common at east end of plateau though not listed by Britton. Noted by Woodbury, April 15–17, 1962 at lighthouse area. RANGE: Desecheo, Muertos Island; Hispaniola, Jamaica and Cuba.

ANNONACEAE

* **Annona reticulata** L.
Trees planted at Sardinera, cultivated, introduced, noted by Woodbury, June 1–4, 1972. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies, widely cultivated for its fruit in the tropics.

LAURACEAE

Nectandra coriacea (Sw.) Griseb.
Listed by Britton in 1915 (3) in the "base of limestone cliff, Sardinera." On coastal plain at foot of cliff, July 19, 1944, *Chardón and Otero* 891. Listed by Little in 1955 (16) and noted by Woodbury at Sardinera, April 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, southern Florida, south to the Bahamas, the Greater Antilles to Grenada and Tobago; Mexico (Yucatán), British Honduras and Guatemala.

Cassytha filiformis L.
Cassytha americana Nees—Listed by Britton in 1915 (3) as "frequent on coastal plain." At Playa de Pájaros, March 4, 1944, *Chardón and Otero* 892. Abundant, noted by Woodbury along lighthouse trail, April 1962.

FIG. 4—Patches of columnar cacti, *Pilosocereus royenii* are a very common sight on the plateau in Mona Island.

RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix; cosmopolitan in the tropics.

CANELLACEAE

Canella winterana (L.) Gaertn.
Listed by Britton in 1915 (3): "common on coastal plain and plateau." On plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 998. Listed by Little in 1955 (16). Noted by Woodbury, April 1962, on the plateau and collected on the coastal plain, Feb. 22–24, 1968, *Woodbury, Martorell and García* M-206 June 1–4, 1972, *Woodbury* M-280. RANGE: Puerto Rico, Icacos, Vieques, U.S. Virgin Islands; Anegada, West Indies south to Barbados; Florida (U.S.A.).

GUTTIFERAE

Clusia rosea Jacq.
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." On the coastal plain at Sardinera, March 4, 1944, *Chardón and Otero* 997. Listed by Little in 1955 (16). At Sardinera, widespread, uncommon, February 22–24, 1968, *Woodbury, Martorell and García* M-28. A white-flowered form also present, two trees observed on northwest cliff by Woodbury. RANGE: Puerto Rico, Desecheo, Vieques, Culebra, U.S. Virgin Islands; Tortola, West Indies and continental tropical America.

PAPAVERACEAE

* **Argemone mexicana** L.
At Sardinera, April 5, 1944, *J. A. Ramos* 893. Noted by Woodbury at Sardinera, April 15–17, 1962. RANGE: Puerto Rico, Icacos, Vieques; Virgin Gorda, West Indies, Bermuda, southern United States and continental tropical America; naturalized in the Old World tropics.

CAPPARACEAE

Capparis cynophallophora L.
Listed by Britton in 1915 (3) as "frequent on the coastal plain." At Sardinera, March 1, 1944, *Chardón and Otero* 895; on trail from Uvero to Los Cerezos, July 21, 1944, *Otero and Gregory* 897. Listed by Little in 1955 (16). At Sardinera and on plateau east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-17. RANGE: Puerto Rico, Desecheo, Icacos, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda.

† **Capparis flexuosa** (L.) L.
Listed by Britton in 1915 (3) as "common on the coastal plain." At foot of limestone plateau, Sardinera, March 2, 1944, *Chardón and Otero* 896. Recorded by Little in 1955 (16). Noted by Woodbury at Sardinera, widespread, fairly common, April 1962. MONITO ISLAND, June 6, 1969, *Kepler* Mt.3; recorded by *Woodbury et al.* Mt.-19, as abundant, June 19–20, 1973. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; Jost Van Dyke, Tortola, Virgin Gorda, southern Florida to the Bahamas through the West Indies south to Barbados, Trinidad, Tobago; northern Mexico south to Central America, Brazil, Perú and Argentina.

Cleome gynandra L.
Listed by Britton in 1915 (3) as "in waste and cultivated grounds, coastal plain." Sardinera, March 1, 1944, *Chardón and Otero* 894; at lighthouse area, February 22–24, 1968, seasonal, weedy, *Woodbury, Martorell and García* M-27. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies, southern United States, Bermuda and continental tropical America. Native to the Old World tropics.

* **Morisonia americana** L.
In sinks on plateau at Los Cerezos, rare, June 1–4, 1972, *Woodbury* M-313. RANGE: Puerto Rico, Desecheo, Culebra, Vieques, U.S. Virgin Islands; Tortola, Jost Van Dyke; from St. Martin south to Trinidad; from Mexico to Nicaragua and from Colombia to Venezuela, Aruba and Ecuador.

CRUCIFERAE (BRASSICACEAE)

Brassica willdenovi Boiss.
Brassica integrifolia (West) O.E. Schulz—Listed by Britton in 1915 (3) as "occasional on cultivated ground, coastal plain." Noted at Sardinera, April 1962 by Woodbury. RANGE: Puerto Rico, Vieques, Culebrita, U.S. Virgin Islands; Tortola, Virgin Gorda, Greater Antilles, Bahamas; from Guadeloupe to Trinidad. Native of South Asia.

Cakile lanceolata (Willd.) O. E. Schulz
Listed by Britton in 1915 (3): "common on coastal sands." Sardinera, March 1, 1944, *Chardón and Otero* 900; same locality, February 22–24, 1968, *Woodbury, Martorell and García* M-16. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, southern United States, Bermuda and northern South America.

Lepidium virginicum L.
Listed by Britton in 1915 (3) as "common in waste and cultivated ground." Sardinera, March 1, 1944, *Chardón and Otero* 899; at the same general area, February 22–24, 1968, *Woodbury, Martorell and García* M-90. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, West Indies, continental North America, from where it is native.

CRASSULACEAE

* **Bryophyllum pinnatum** (Lam.) Oken
Above Gato Cave on the plateau, March 9, 1944, *Chardón and Otero* 901. An introduced species, noted at Sardinera, around homes, common April 1962; not collected. RANGE: Native to Madagascar, now naturalized in many areas of the world: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Anegada, the West Indies, Bahamas, Florida, continental tropical America and Old World tropics.

LEGUMINOSAE-CAESALPINIACEAE

Caesalpinia bonduc (L.) Roxb.
Guilandina crista (L.) Small; *Caesalpinia crista* L.—Listed by Britton in 1915 (3) as "occasional on coastal thickets." Sardinera, May 17, 1944, *Chardón and Otero* 1909. Noted by Woodbury at Sardinera and along the lighthouse trail from Playa de Pájaros, April 1962. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies, Bermuda, Florida, continental tropical America and Old World tropics.

Caesalpinia divergens Urban
Guilandina divergens (Urban) Britton—Listed by Britton in 1915 (3) as "frequent on the coastal plain." At Uvero on the coastal plain, March 2, 1944, *Chardón and Otero* 911. On Uvero trail at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-15. RANGE: Puerto Rico, Icacos (?), Muertos Island, Culebra, U.S. Virgin Islands; Virgin Gorda.

Caesalpinia melanosperma (Eggers) Urban
Guilandina melanosperma Eggers—Listed by Britton in 1915 (3) as "frequent on the coastal plain." At Uvero, May 24, 1944, *Chardón and Otero* 910. Sardinera, June 1–4, 1972, *Woodbury* M-252. RANGE: Only found in Mona, Tortola and St. Croix. Endemic.

Caesalpinia monensis Britton
Tentatively listed by Britton in 1915 (3) as *C. domingensis* Urban, but later described by him as the new species, *C. monensis*. At Sardinera on the coastal plain at foot of cliffs, March 7 and May 26, 1944, *Chardón and Otero* 908, 909; on trail to Gato Cave on the plateau, July 20, 1944, *Chardón and Otero* 907. Noted by Woodbury on plateau, April 1962; on the central sinks reaching tree size of 3 inches trunk diameter and 15 feet in height. RANGE: Found only in Mona and the Bahamas.

* **Cassia aeschynomene** DC.
Chamaecrista aeschynomene (DC.) Greene—Listed by Woodbury, from Sardinera, April 15–17, 1962. RANGE: Puerto Rico, Vieques, Desecheo; Cuba and Hispaniola.

Cassia diffusa DC.
Chamaecrista diffusa DC., *C. chamaecrista* (L.) Britton—Listed by Britton in 1915 (3) as "collected by Prof. Stevens, not found by us." Noted at Sardinera by Woodbury, April 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies south to Grenada, Margarita and Curaçao.

* **Cassia grammica** Spreng.
Chamaecrista grammica (Spreng.) Pollard—Listed at Sardinera by Woodbury, April 1962. RANGE: Puerto Rico, Vieques, Little St. James Island (St. Thomas); Cuba and Hispaniola.

Cassia granulata (Urban) Macbride
Chamaecrista granulata (Urban) Britton—Listed by Britton in 1915 (3) as "common on the coastal plain and on sand dunes." On plateau above Uvero, March 2, 1944, *Chardón and Otero* 904. At lighthouse area and on plateau east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-20. RANGE: Puerto Rico, Muertos Island, endemic.

Cassia occidentalis L.
Ditremexa occidentalis (L.) Britton & Rose—Listed by Britton in 1915 (3) on "sandy soil, Playa de Pájaros." On plateau above Gato Cave, March 9, 1944, *Chardón and Otero* 905. Noted by Woodbury at Sardinera, April 1962. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, southeastern United States, Mexico, continental tropical America and Old World tropics.

* **Cassia obtusifolia** L.
Emelista tora (L.) Britton & Rose—Noted by Woodbury at Sardinera and Uvero, weedy, rare, April 1962. RANGE: Puerto Rico, Vieques, St. Thomas, St. Croix; Tortola, West Indies, southeastern United States, continental tropical America and Old World tropics.

Delonix regia (Boj. ex Hook.) Raf.
At Uvero, May 24, 1944, *Chardón and Otero* 906. Listed by Little in 1955 (16) as "four trees planted beside old house at Uvero, 20 feet high at 8–16 inches d.b.h., and no seedlings." Noted by Woodbury in April 1962 and later by the writers, February 22–24, 1968 at Uvero

beach where 6 trees were present in the nearby vicinity. RANGE: Native to Madagascar, now widely introduced as an ornamental in the tropics; common species in the Caribbean area.

Haematoxylon campechianum L.
Listed by Little in 1955 (16) as "a few trees to 20 feet high and 6 inches d.b.h., planted near Sardinera. (Introduced)." Noted by Woodbury, near airport at Sardinera, April 1962. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola. Native of Central America, introduced and widely naturalized in the Caribbean and in some parts of the Old World tropics.

Tamarindus indica L.
At Uvero, March 2, 1944, *Chardón and Otero* 903. Listed by Little in 1955 (16) as "three planted trees at Uvero, to 30 feet high and 1 foot d.b.h., not reproducing. (Introduced)." In the same general area, February 22–24, 1968, *Woodbury, Martorell and García* M-204. RANGE: Puerto Rico, Muertos Island, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Buck Island Reef; native of the Old World tropics, probably Africa.

LEGUMINOSAE — MIMOSACEAE

Enterolobium cyclocarpum (Jacq.) Griseb.
Listed by Little in 1955 (16) as "a planted tree 70 feet tall and 14 inches d.b.h. at Sardinera. (Introduced)." The same tree observed by Woodbury, Martorell and García, February 22–24, 1968, but this time about 80 feet high and 40 inches in trunk diameter. RANGE: Native of Central and South America, introduced and cultivated in the West Indies and West Africa.

* **Desmanthus virgatus** (L.) Willd.
Acuan virgatum (L.) Medic., *A. depressum* (H. & B.) Kuntze and *A. insulare* Britton & Rose — At Sardinera, July 19, 1944, *Chardón and Otero* 1671. Sardinera on the Uvero trail, February 22–24, 1968, *Woodbury, Martorell and García* M-44; at Sardinera, June 1–4, 1972, *Woodbury* M-258. RANGE: Puerto Rico, Desecheo, Icacos, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies, Florida and continental tropical America.

Adams considers *D. virgatus* and *D. depressum* as two different species; the writers had the same thought, but upon consulting Dr. Alain Logier, he still believes that all three species: *C. insulare, C. depressum* and *C. virgatus*, are only one: *C. virgatus*. However, the authors would like to note that a dwarf form of *C. virgatus* is frequently seen in many of the smaller islands and keys around Puerto Rico.

Leucaena leucocephala (Lam.) DeWit
L. glauca (L.) Benth., *L. planisiliqua* (L.) Gillis — Listed by Little in 1955 (16). Noted by Woodbury as common in the airport area mixed with Guinea grass (*Panicum maximum*); also on the plateau, April 1962. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-91. This is an introduced species in Mona Island. RANGE: Puerto Rico, Muertos Island, U.S. Virgin Islands; Tortola, Virgin Gorda, Jost Van Dyke; throughout the West Indies from the Bahamas and Cuba south to Trinidad and Tobago; from southern Mexico to northern South America. Naturalized in the Old World tropics.
The name in synonymy of the species *L. planisiliqua* is due to Gillis, in Gillis and Stearn 1974 (11).

† **Pithecellobium unguis-cati** (L.) Benth.
Listed by Britton in 1915 (3) as "common in coastal thickets and occasional on the coastal plain." On the plateau, trail to Playa de Pájaros, March 4, 1944, *Chardón and Otero* 902. Listed by Little in 1955 (16). Noted by Woodbury in April 1962 and by Woodbury, Martorell and García, February 22–24 as very common in Sardinera, on the plateau and everywhere on the island. MONITO ISLAND; June 6, 1969, *Kepler* Mt.-7; also on June 19–20, 1973, common, *Woodbury et al.* Mt.-29. RANGE: Puerto Rico, Desecheo, Muertos Island; Icacos, Vieques, Culebra, Piñeros, U.S. Virgin Islands; Jost Van Dyke, Tortola, Virgin Gorda and Anegada; through the West Indies to Trinidad and Tobago, Bonaire, Curaçao and Aruba; also in Venezuela, Guyana and Mexico.

Prosopis juliflora (Sw.) D.C.
Neltuma juliflora (Sw.) Raf. — Listed by Little in 1964 (17). Several trees at Uvero beach, an introduced species, February 22–24, 1968, *Woodbury, Martorell and García* M-118, M-229. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, through the West Indies, apparently introduced and naturalized; from Bahamas and Cuba to Montserrat, Barbados, Trinidad, Bonaire, Curaçao, Aruba; southwestern United States south to Mexico, Central America, Colombia and Venezuela.

LEGUMINOSAE — PAPILIONACEAE

* **Alysicarpus vaginalis** (L.) DC.
At the lighthouse area on eastern Mona, weedy, February 22–24, 1968, *Woodbury, Martorell and García* M-4. RANGE: Puerto Rico, Vieques, the U.S. Virgin Islands; Tortola, Virgin Gorda, nearly throughout all of the West Indies. Native of the Old World, now naturalized in the American tropics and subtropics.

* **Cajanus cajan** (L.) Millsp.
Cajan cajan (L.) Millsp. — At Sardinera (cultivated), May 17, 1947, *Chardón, Otero and González-Más* 1910. Noted by the writers at Sardinera in April 1962 and later at Uvero also on February 22–24, 1968, rare. RANGE: probably native of the East Indies, now widespread through cultivation in the tropics. Commonly planted in Puerto Rico, Virgin Islands, West Indies and continental tropical America for its tasty, edible seed.

Canavalia maritima (Aubl.) Urban
Canavali maritima (Aubl.) Thou. — Recorded by Britton and Wilson from Mona Island in 1924 (5); however Britton in 1915 (3) listed a *Canavalia lineata* (Thunb.) D.C., which could be this species. At Uvero on the coastal plain, March 2, 1944, *Chardón and Otero* 922. Noted by the writers, common along beaches at Sardinera and Uvero, February 22–24, 1968. RANGE: Puerto Rico, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Florida, Bermuda, continental tropical America and Old World tropics.

Centrosema virginianum (L.) Benth.
Bradburya virginiana (L.) Kuntze — Listed by Britton in 1915 (3): "common on the coastal plain and on the plateau." Along trail to Punta Capitán on the plateau, March 4, 1944, *Chardón and Otero* 919; in this general area on March 7, 1944, *Chardón and Otero* 918. Noted by the writers at Sardinera and along the lighthouse trail on the plateau, February 22–24, 1968. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Tortola, Anegada, West Indies, southeastern United States, continental tropical America and tropical Africa.

Desmodium canum (J. F. Gmel.) Schinz & Thell.
Meibomia supina (Sw.) Britton — Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." Along the Sardinera-Uvero trail, May 17, 1947, *Chardón and Otero* 1911. Noted at Sardinera and at lighthouse area by the writers on February 22–24, 1968. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies, continental tropical America and tropical Africa.

Desmodium glabrum (Mill.) D.C.
Meibomia mollis (Vahl) Kuntze — Listed by Britton in 1915 (3) as "occasional on cultivated ground on the coastal plain." Along trail to Gato Cave, July 20, 1944, *Chardón and Otero* 1912. At Uvero on the coastal plain, December 11–12, 1971, *Woodbury, Martorell and García* M-243. RANGE: Puerto Rico, Culebra, St. Thomas, St. Croix; Tortola, Virgin Gorda, Greater Antilles, Martinique, Curaçao, Bahamas and continental tropical America.

* **Desmodium procumbens** (Mill.) Hitchc.
Meibomia procumbens (Mill.) Britton — On the Uvero area, February 22–24, 1968, *Woodbury, Martorell and García* M-192; again on June 1–4, 1972, *Woodbury* M-290. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; from Cuba and Jamaica to Margarita, Trinidad, Curaçao, continental tropical America and Old World tropics.

* **Desmodium triflorum** (L.) D.C.
Sagotia triflora (L.) Duch. & Walp. — Noted by Woodbury at Sardinera, April 1962, weedy, rare. RANGE: Puerto Rico, U.S. Virgin Islands; Virgin Gorda, Cuba, Jamaica, south to Trinidad, Florida; general in the tropics of both hemispheres.

* **Galactia dubia** DC.
On the plateau, trail to Gato Cave, March 9, 1944, *Chardón and Otero* 1803. Noted by Woodbury, April 1962; at the lighthouse area, but also fairly common on the trail on the plateau and in Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-66. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, Culebra, U.S. Virgin Islands; from Anguilla to Guadeloupe.

Galactia striata (Jacq.) Urban
Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau; a race with small leaflets and slender peduncled racemes." At Punta Capitán on the plateau, March 4, 1944, *Chardón and Otero* 919. Common on plateau and coastal plain; from Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-67. RANGE: Puerto Rico, Desecheo, Vieques, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, Antigua,

Greater Antilles, Martinique, Tobago, Trinidad and northern South America.

Indigofera suffruticosa Mill.
Listed by Britton in 1915 (3) as "cultivated ground, coastal plain." Uvero, March 2, 1944, *Chardón and Otero* 915. Noted at Sardinera by Woodbury, April 1962; in same general area, February 22–24, 1968, *Woodbury, Martorell and García* M-183. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies and continental tropical America. Introduced into the Old World.

* **Lonchocarpus domingensis** (Turp.) DC.
Lonchocarpus sericeus (Poir.) DC. var. *glabrescens* Benth. – Listed by Little in 1955 (16) as *Lonchocarpus* sp., probably introduced. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-93; in same area, June 1–4, 1972, *Woodbury* M-272. RANGE: Puerto Rico, Vieques; Greater Antilles, Guadeloupe and Martinique.

Rhynchosia minima (L.) DC.
Dolicholus minimus (L.) Medic. – Listed by Britton in 1915 (3) on "cultivated ground, Uvero. A race apparently of this species, with thick leaflets, strongly veined; not found either in flower or in fruit, the determination therefore uncertain." Later in 1924 (5) the specimens were finally determined as *Dolicholus minimus* and recorded from Mona and other localities in Puerto Rico. At Sardinera and in lighthouse area, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-122. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Florida, continental tropical America and Old World tropics.

Rhynchosia reticulata (Sw.) DC.
Dolicholus reticulatus (Sw.) Millsp. – Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." On plateau, above Uvero, March 2, 1944, *Chardón and Otero* 920; along the Cerezos trail, March 3, 1944, *Chardón and Otero* 921. At Sardinera, rare, local on coastal plain and also on the plateau, February 22–24, 1968, *Woodbury, García and Martorell* M-123. RANGE: Puerto Rico, Vieques, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies and continental tropical America.

Stylosanthes hamata (L.) Taubert
Listed by Britton in 1915 (3) as "frequent on the coastal plain." On hill along the trail to Playa de Pájaros, March 4, 1944, *Chardón and Otero* 917. Very common everywhere in Mona Island, along the lighthouse trail from Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-135; on plateau, December 11–12, 1971, same collectors M-250. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada; the West Indies south to Barbados and Grenada; Florida and from Guatemala to Colombia.

† **Tephrosia cinerea** (L.) Pers.
Cracca cinerea (L.) Morong – Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Uvero, May 24, 1944, *Chardón and Otero* 916. A very common species all over Sardinera, Uvero and on the plateau from the lighthouse area to Bajura de los Cerezos; near lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-138; at Sardinera, December 11–12, 1971, *Woodbury* M-234. MONITO ISLAND, rare, June 19–20, 1973, *Woodbury et al.* Mt.-30. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; West Indies and continental tropical America.

* **Tephrosia senna** Kunth
Cracca cathartica (Sessé & Moc.) Britton & Millsp. – Noted by Woodbury, April 15–17, 1962; also by the writers, at Sardinera, local, uncommon, February 22–24, 1968. RANGE: Puerto Rico, Virgin Gorda, Bahamas, Hispaniola, Saba, St. Eustatius, St. Kitts, Colombia.

* **Teramnus labialis** (L.f.) Spreng.
Noted by Woodbury, April 1962; also by the writers at Sardinera, February 22–24, 1968, uncommon at the coastal plain. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; from St. Kitts south to Barbados; Tortola and Jamaica.

* **Vigna luteola** (Jacq.) Benth.
Vigna repens (L.) Kuntze – At Sardinera, July 21, 1944, *Chardón and Otero* 923. Noted by Woodbury at Sardinera on April 1962; on sandy beach at Sardinera, local, also noted by the writers, February 22–24, 1968. RANGE: Puerto Rico, Vieques, Culebra, U.S. Virgin Islands; West Indies, Bermuda, southern United States, continental tropical America and Old World tropics and subtropics.

KRAMERIACEAE

Krameria ixina L.
Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." Along the Cerezos trail, March 3, 1944, *Chardón and Otero* 914. On plateau near Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-87. RANGE: Puerto Rico, St. Thomas; St. Eustatius, Antigua, Bonaire, Curaçao, Hispaniola and Colombia.

ERYTHROXYLACEAE

Erythroxylum aerolatum L.
Along trail to Gato Cave on plateau, July 20, 1944, *Chardón, Otero and Gregory* 924; 925; on same general area and by same collectors, May 24, 1944, 926. Listed by Little in 1955 (16). At Sardinera and on the plateau, February 22–24, 1968, *Woodbury, Martorell, and García* M-53; M-199. RANGE: Puerto Rico, St. Thomas (?); Greater Antilles, Bahamas, southern Mexico, Guatemala, El Salvador, British Honduras; recorded from northern South America, probably an error.

* **Erythroxylum rotundifolium** Lunan
E. brevipes DC. – Noted by Woodbury on plateau, April 1962; later along trail from the lighthouse to Uvero by the writers, February 22–24, 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, Piñeros, Vieques, Culebra, U.S. Virgin Islands; Jost Van Dyke, Tortola, Virgin Gorda, Buck Island, St. Martin, St. Barts, Guadeloupe, Curaçao, Bahamas and Greater Antilles.

ZYGOPHYLLACEAE

Guaiacum sanctum L.
Listed by Britton in 1915 (3) as "frequent on the coastal plain." At Sardinera, March 4, 1944, *Chardón and Otero* 927. Listed by Little in 1955 (16) as "quantities of this valuable wood were removed in the past." At the Uvero area, February 22–24, 1968, *Woodbury, Marterell and García* M-70, M-208; on the Uvero area, June 1–4, 1972, *Woodbury* M-238. RANGE: Puerto Rico, Hispaniola, Cuba, Bahamas, Florida, Mexico (Yucatán), Guatemala and Nicaragua.

* **Kallstroemia pubescens** (G. Don) Dandy
K. caribaea Rydberg – On lighthouse area, but also present on Uvero beach on the coastal plain, February 22–24, 1968, *Woodbury, Martorell and García* M-86. RANGE: Puerto Rico, St. Thomas; Tortola, Lesser Antilles, Florida, Central America, continental tropical America and West Africa.

* **Tribulus cistoides** L.
Noted by Woodbury in Sardinera and Uvero areas, April 1962; from the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-144, M-228. A rare species in all localities where collections were made; again from lighthouse area, June 1–4, 1972, *Woodbury* 294. RANGE: Naturalized on banks at San Juan, Puerto Rico and vicinity, Guánica, St. Thomas, St. Croix; Tortola, Virgin Gorda, southeastern United States, West Indies south to Martinique, continental tropical America, southwest Pacific; introduced into Africa and Asia.

RUTACEAE

Amyris elemifera L.
Listed by Britton in 1915 (3) as "occasional on the coastal plain." On plateau along trail to Bajura de Los Cerezos, March 3, 1944, *Chardón and Otero* 932; on trail from Uvero to Los Cerezos, July 21, 1944, *Chardón, Otero and Gregory* 931. Listed by Little in 1955 (16). On plateau east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-7 RANGE: Puerto Rico, Desecheo, Icacos, Culebra, Vieques, U.S. Virgin Islands; Anegada, Jost Van Dyke, Virgin Gorda; Lesser Antilles south to St. Vincent, Grenada; Greater Antilles, Bahamas, Florida; Central America (Guatemala, Honduras, British Honduras, El Salvador). Recorded at Venezuela, apparently an error.

Citrus aurantifolia (L.) Swingle
Listed by Little in 1955 (16) as "a few lime trees to 15 feet tall and 3 inches d.b.h. have been planted at Sardinera and Uvero (Introduced)." Noted by the writers, cultivated in backyard of Forest Ranger's Station at Sardinera, February 22–24, 1968. RANGE: Native to Asia (East Indian Archipelago), introduced into Puerto Rico at the beginning of its colonization; cultivated for its valuable fruit everywhere in the tropics and subtropics of both hemispheres.

* **Citrus aurantium** L.
Noted by Woodbury at Sardinera, planted and introduced into Mona Island, February 22–24, 1968. RANGE: Native of southeastern Asia. Widely planted and naturalized in tropical and subtropical regions of the world including Bermuda, Bahamas, the West Indies, southeastern United States and from Mexico to Argentina.

Citrus sinensis Osbeck
Listed by Little in 1955 (3) at Sardinera, introduced. Noted by the writers at the Forest Ranger's house in Sardinera, February 22–24, 1968. RANGE: Native of China, introduced and planted for its valuable fruit in the tropics and subtropics.

Triphasia trifolia (Burm.f.) P. Wilson
At Sardinera, March 6, 1944, *Chardón and Otero* 933. Listed by Little in 1955 (16) as "a shrub 10 feet high cultivated at Sardinera (Introduced)." Noted by Woodbury, April

1962; collected specimens from several trees at the base of cliffs at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-148. RANGE: Native of the East Indies. Spontaneous after cultivation in Puerto Rico and the Virgin Islands, Vieques; Tortola, southern United States; widely naturalized in tropical America; cultivated as an ornamental and hedge plant.

Zanthoxylum punctatum Vahl

Fagara trifoliata Sw.—Listed by Britton in 1915 (3) on the "coastal plain between Sardinera and Uvero." Along trail from Uvero to Los Cerezos, July 21, 1944, *Chardón, Otero and Gregory* 930. Noted by the writers on the coastal plain and on the plateau, rare, February 22–24, 1968. RANGE: Puerto Rico, St. Croix; Jamaica, Hispaniola; Lesser Antilles from St. Martin to Barbados, Trinidad and Venezuela.

SIMAROUBACEAE

Suriana maritima L.

Listed by Britton in 1915 (3) as "common on coastal sands." On coastal plain at Sardinera, March 3, 1944, *Chardón and Otero* 934. Common along the coast line at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-136. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Anegada, West Indies, Bermuda, Florida, continental tropical America and Old World tropics (except West Africa).

BURSERACEAE

Bursera simaruba (L.) Sarg.

Elaphrium simaruba (L.) Rose—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Los Caobos on the coastal plain, March 2, 1944, *Chardón and Otero* 936; at Sardinera, May 22, 1944, *Chardón and Otero* 935. Listed by Little in 1955 (16) as one of the dominant trees of the plateau and also of the coastal plain. Noted by the writers as a very common tree on the island, April 1962 and February 1968. RANGE: Puerto Rico, Mona, Desecheo, Muertos Island, Icacos, Palomino, Culebra, Vieques, U.S. Virgin Islands; Tortola, Jost Van Dyke, Virgin Gorda, the West Indies south to Trinidad, Tobago, Aruba; Florida; from Mexico to Colombia, Venezuela and the Guianas.

MELIACEAE

Swietenia mahagoni Jacq.

Listed by Wadsworth and Gilormini in 1945 (29) as "three small plots of *S. mahagoni*, were planted in 1937, are the only forest plantings made to date on the plateau." Recorded again by Little in 1955 (16) as "the Civilian Conservation Corps in the years 1937 to 1939 made plantations of about 200 acres on the coastal plain southeast of Sardinera and small experimental plots on the plateau." This introduced species was noted as common in Sardinera, the lighthouse area and plateau by Woodbury in April 1962 and later by the writers in February 1968. RANGE: Native in southern Florida including the Florida Keys, Bahamas, Cuba, Jamaica and Hispaniola. Introduced into Puerto Rico, the Virgin Islands, Bermuda, Lesser Antilles, Trinidad, Tobago, Curaçao, South America and elsewhere in tropical regions.

MALPIGHIACEAE

Byrsonima lucida (Sw.) DC.

Byrsonima cuneata (Trucz.)P. Wilson—Listed by Britton in 1915 (3) as "occasional on the coastal plain." In Sardinera, March 3, 1944, *Chardón and Otero* 929. Listed by Little in 1955 (16). On plateau east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-14. RANGE: Puerto Rico, Vieques, St. Thomas (according to de Candolle, listed by Krebs); Anegada, from Barbuda to Barbados, Florida, Bahamas, Cuba and Hispaniola.

* **Malpighia coccigera** L.

On the plateau, June 1–4, 1972, uncommon, *Woodbury* M-298. RANGE: Puerto Rico, St. Thomas; Martinique, St. Lucia; Cuba and Hispaniola; introduced into Jamaica as an ornamental.

* **Malpighia setosa** Spreng.

Collected by Bárbara Cintrón and Lee Rogers on the northern cliffs of Mona Island in 1973. On the plateau, June 1972, *Woodbury* M.299. RANGE: Hispaniola, Cuba and now Mona Island.

* **Malpighia punicifolia** L.

Planted at Sardinera as noted by Woodbury in 1974. RANGE: West Indian Islands and northern South America.

† **Stigmaphyllon periplocifolium** (Desf.) Juss.

S. lingulatum (Poir.) Small—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." On the plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 928. Common all over Sardinera as noted by Woodbury, April 1962. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-133. MONITO ISLAND:

frequent, June 19–20, 1973, collected by *Woodbury et al.* Mt.-18. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, from St. Martin to St. Lucia, Hispaniola.

* **Stigmaphyllon tomentosum** (Desf.) Ndz.

Noted by Woodbury, April 1962 and by Woodbury, Martorell and García, February 22–24, 1968 at Sardinera. A similar species is listed by Adams 1972 (2) as *S. emarginatum* (Cav.) A. Juss. This name corresponds in part to one of the synonyms given by Britton to *S. tomentosum*. Whether both plants are the same needs further study. The authors of this publication until then prefer to keep *S. tomentosum* as the valid name for the species. RANGE: Puerto Rico, St. Thomas (ex Krebs), St. John and Virgin Gorda. Endemic.

EUPHORBIACEAE

Argythamnia candicans Sw.

Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Uvero on the coastal plain, March 2, 1944, *Chardón and Otero* 944. Common at Sardinera as noted by Woodbury in April 1962; in the same locality, February 22–24, 1968, *Woodbury, Martorell and García* M-9. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, St. Martin, Anguilla, St. Barts and Greater Antilles.

Argythamnia fasciculata (Vahl) Muell. Arg.

Ditaxis fasciculata Vahl—At Sardinera, uncommon, February 22–24, 1968, *Woodbury, Martorell and García* M-285. RANGE: Puerto Rico, Muertos Island, U.S. Virgin Islands; Virgin Gorda, St. Martin. Recorded by Mueller and by Pax, from Cuba.

Ateramnus lucidus (Sw.) Rothm.

Gymnanthes lucida Sw.—At Sardinera, July 21, 1944, *Chardón and Otero* 947; on plateau along the Cerezos trail, March 3, 1944, *Chardón and Otero* 948. Recorded in 1945 by Wadsworth and Gilormini (29) and listed by Little in 1955 (16) as common and dominant locally in the coastal plain and plateau. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-74; M-209. RANGE: Puerto Rico, Desecheo, Icacos, Culebra, Vieques, U.S. Virgin Islands; Jost Van Dyke, Virgin Gorda; West Indies south to Guadeloupe; Florida, Bahamas; from Mexico to Guatemala.

Chamaescye buxifolia (Lam.) Small

Listed by Britton in 1915 (3) as "common on coastal sands." At Sardinera, March 5, 1944, *Chardón and Otero* 957; 958. On the beach at Sardinera, noted by Woodbury, April 1962; along the beach at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-168. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Virgin Gorda, Anegada, the West Indies, Bermuda, Florida and continental tropical America. This species is recorded by Adams (2), page 429 as: *Euphorbia mesembrianthemifolia* Jacq.

* **Chamaesyce cowellii** Millsp.

On the coastal plain near the airfield, July 20, 1944, *Chardón and Otero* 950. On the plateau, very rare, June 1–4, 1972, *Woodbury* M-236. RANGE: Puerto Rico, Antigua and now Mona Island.

* **Chamaesyce hirta** L.

At the lighthouse area and on the west coast of Mona Island, February 22–24, 1968, *Woodbury, Martorell and García* M-56. RANGE: Puerto Rico, Desecheo, Icacos, Muertos Island, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Tortola, West Indies; Florida, Bermuda, continental tropical America north to Mexico.

Chamaesyce hypericifolia (L.) Millsp.

Listed by Britton in 1915 (3): as "common in cultivated ground on the coastal plain." At Sardinera, May 24, 1944, *Chardón and Otero* 952; in same general area, March 4, 1944. *Chardón and Otero* 955. Noted by Woodbury in lighthouse area and Sardinera, April 1962. RANGE: Puerto Rico, Culebra, U.S. Virgin Islands; Tortola, Florida, Bermuda, the West Indies and continental tropical America north to Mexico. This species is listed by Adams (2), page 430 as *Euphorbia glomerifera* (Millsp.) L. C. Wheeler.

* **Chamaescye hyssopifolia** (L.) Small

On the coastal plain near airfield, July 20, 1944, *Chardón and Otero* 951. At the lighthouse area, February 22–24, 1968, *Woodbury, Martorell, and García* M-57. RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix; the West Indies south to Martinique, Guadeloupe and Grenada; continental tropical America; naturalized in southern Europe.

Chamaescye monensis Millsp.

Listed by Britton in 1915 (3) on the "limestone plateau, Uvero, endemic." Common along the lighthouse trail and in caves north and south of the lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-217; and on June 1–4, 1972, *Woodbury* M-319. RANGE: Although listed as an endemic species by Britton, after further studies the plant has, with reservation, been recorded by

Burch 1966 (6) as *C. adenoptera* (Bertol.) Small ssp. *pergamena* (Small) Burch, from Florida, Cuba, Hispaniola and Mona Island.

* **Chamaesyce prostrata** (Aiton) Small
Noted by Woodbury as common on trail to lighthouse on the plateau and also at the lighthouse area proper, April 15–17, 1962. At the lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-59. RANGE: Puerto Rico, Culebrita, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies, southeastern United States, Bermuda, continental tropical America and tropical Africa.

Chamaesyce serpens (Kunth) Small
Listed by Britton in 1915 (3): in "moist soil, coastal plain and plateau." On coastal plain near airfield, July 20, 1944, *Chardón, Otero and Gregory* 950. Noted by Woodbury on plateau, common, April 1962. On trail to lighthouse in soil among rocks, February 22–24, 1968, *Woodbury, Martorell and García* M-60. RANGE: Puerto Rico, Icacos, St. Thomas, St. Croix; Antigua, Guadeloupe, Martinique, Grenada, Barbados, Jamaica, Hispaniola; widely distributed in continental tropical America; also at Sierra Leone, southern Europe.

* **Chamaesyce** sp.
Probably a new species, collected by *Woodbury* M-55, among rocks in a cave near the lighthouse, February 22–24, 1968.

* **Chamaesyce turpinii** (Boiss.) Millsp.
C. anegadensis Millsp.; *C. portoricensis* Millsp. – On the plateau, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-218; M-219; along trail to lighthouse on rocky soil, February 22–24, 1968, *Woodbury, Martorell and García* M-60A; in the same general area, June 1–4, 1972, *Woodbury* M-320; M-322. RANGE: Puerto Rico, Anegada, Haiti and Cuba.

Croton betulinus Vahl
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1674. Noted by Woodbury at Sardinera and on the plateau, very common, April 1962; on the plateau south of the lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-35. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Anegada; from Anguilla to Martinique, and continental tropical America.

† **Croton discolor** Willd.
Listed by Britton in 1915 (3) as "common on the plateau." On the plateau above Uvero, March 2, 1944, *Chardón and Otero* 941; at Playa de Pájaros, March 4, 1944, 938; on the trail to Gato Cave, August 18, 1944, *Chardón, Otero and Beatty* 1813; also on the same general area May 16, 1947, *Chardón, Otero and González-Más* 1916. On plateau south of lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-36 and on plateau east of Uvero, June 1–4, 1972, *Woodbury* 292. MONITO ISLAND, June 19–20, 1973, *Woodbury et al.* Mt.-25. RANGE: Puerto Rico, Vieques, Culebra, St. Thomas, St. Croix; Anegada, Hispaniola; doubtfully recorded from Jamaica by Adams 1972 (2).

Croton lucidus L.
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." On plateau above Uvero, March 2, 1944, *Chardón and Otero* 940; along trail to Gato Cave, May 25, 1944, *Chardón and Otero* 939. Noted by Woodbury as common on the plateau on April 1962, later collected on the same general area and at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-37 and *Woodbury, Martorell and García* M-248 on December 11–12, 1971. RANGE: Puerto Rico, Muertos Island; Cuba, Jamaica, Cayman Islands and Hispaniola.

Croton rigidus (Muell. Arg.) Britton
On the plateau, rare, west end zone of the Island, February 22–24, 1968, *Woodbury, Martorell and García* M-171. RANGE: Puerto Rico, Culebra, Culebrita, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda. Endemic to Puerto Rico and the Virgin Islands.

Euphorbia cyathophora Murr.
Poinsettia cyathophora (Murr.) Kl. & Garcke – Listed by Britton in 1916 (3) as *P. heterophylla* from a sandy beach at Playa de Pájaros, by error. The mistake was later corrected in Britton and Wilson (5). At Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-165. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies (except Bahamas), Bermuda, Florida and continental tropical America.

Euphorbia petiolaris Sims
Aklema petiolare (Sims) Millsp.; *A. petiolaris* (Sims) Millsp. – Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Not listed by Britton and Wilson in their 1924 publication (5) probably by an involuntary error. On the plateau, trail to Los Cerezos, March 7, 1944, *Chardón and Otero* 949. Listed by Little in 1955 (16). On the plateau near Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-58. RANGE: Puerto Rico, Virgin Islands; Jamaica, the Bahamas, Hispaniola, Guadeloupe, Martinique and Margarita (Venezuela).

Hippomane mancinella L.
Listed by Britton in 1915 (3): as "common on the coastal plain." At Sardinera, March 7, 1944, *Chardón and Otero* 946. Listed by Little in 1955 (16). Noted by Woodbury, Martorell and García at Sardinera and at Playa de Pájaros, fairly common, February 22–24, 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Anegada; West Indies, the Pacific coast of Central America, Mexico and continental tropical America.

Jatropha curcas L.
Curcas curcas (L.) Britton & Millsp. – At Uvero area, May 24, 1944, *Chardón and Otero* 942. Listed by Little in 1955 (16) as an introduced species planted at Uvero and not reproducing. Noted by the writers at Sardinera and La Bajura de los Cerezos, in both areas planted and not reproducing, April 1962 and February 1968. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies, Bermuda and continental tropical America.

Jatropha gossypifolia L.
Adenoropium gossypifolium (L.) Pohl – Listed by Britton and Wilson in 1926 (5) from Mona Island as collected by H. E. Anthony, March 1–12, 1926. At Playa de Pájaros, March 4, 1944, *Chardón and Otero* 943. Noted by Woodbury at Sardinera, April 1962. At Sardinera, weedy, February 22–24, 1968, *Woodbury, Martorell and García* M-85. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; West Indies, Florida and continental tropical America.

Jatropha multifida L.
Adenoropium multifidum (L.) Pohl – At Bajura de Los Cerezos, August 17, 1944, *Chardón, Otero and Beatty* 1681. Listed by Little in 1955 (16) at El Corral de los Indios and Bajura de los Cerezos, adding that "a few plants apparently native were found in relatively moist sites in depressions at these two localities in the interior of the plateau, both far from human settlements." Noted by the writers at Bajura de los Cerezos, April 1962 and February 1968. Collected by *Woodbury* M-314, at Los Cerezos, June 1–4, 1972. RANGE: Puerto Rico, St. Thomas, St Croix; West Indies and continental tropical America. Introduced into the Old World.

Pedilanthus tithymaloides var. **parasiticus** (L.) Dressler
P. latifolius Millsp. & Britton – Originally described from plant specimens collected in Bermuda, Jamaica, Cuba, Dominican Republic and Mona Island, as *P. latifolius* in 1915 (3), noting: "perhaps indigenous at the Santo Domingo locality cited [Sánchez, Santo Domingo, (*Rose, Fitch & Russell* 4397)]; at all the others an evident escape from cultivation or in gardens." At the foot of the cliffs, Sardinera, May 17, 1944, *Chardón, Otero and Gonzalez-Más* 1920. Noted by the writers at Sardinera, under cultivation, April 1962 and February 1968. RANGE: Puerto Rico, U.S. Virgin Islands; Greater Antilles, Bermuda, Mexico and British Honduras.

* **Phyllanthus acidus** (L.) Skeels
Cicca disticha L. – Cultivated at Sardinera in backyard of houses as noted by the writers, February 22–24, 1968 (Introduced). RANGE: Native of tropical Asia and perhaps also East Indies but extensively introduced and spontaneous naturalized in tropical regions: throughout the West Indies from Bahamas and Cuba to Trinidad, southern Florida, Mexico, Central and South America.

Phyllanthus amarus Schumach & Thoun.
Phyllanthus niruri of F. & R., not Linnaeus – Listed by Britton in 1915 (3) on "cultivated ground, coastal plain." At Sardinera, May 17, 1947, *Chardón, Otero and González-Más* 1918. In the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-108; also noted at Sardinera, uncommon. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, West Indies, Bermuda, continental tropical America and Old World tropics.

Phyllanthus epiphyllanthus L.
Xylophylla epiphyllanthus (L.) Britton – Listed by Britton in 1915 (3) as "common on the coastal plain." At Sardinera, March 1, 1944, *Chardón and Otero* 937. Noted by Woodbury in 1962, common at Sardinera, along the Uvero trail, on plateau, even on bare rocks on the cliffs, all over Mona. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-109. RANGE: Puerto Rico, St. Thomas; Virgin Gorda, West Indies (according to Britton). Not listed from Jamaica by Adams 1972 (2).

* **Phyllanthus niruri** L.
At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-162; in same area, June 1–4, 1972, *Woodbury* M-265. RANGE: Puerto Rico, St. Thomas, St. Croix;

Tortola, West Indies, Bermuda, Florida, continental tropical America and Old World tropics.

Phyllanthus pentaphyllus Wr. ex Griseb. ssp. **polycladus** (Urban) Webster

Phyllanthus polycladus Urban—On the plateau, local, rare, June 1–4, 1972, *Woodbury* M-291A. RANGE: Puerto Rico, Muertos Island, Icacos; Anegada, Cuba and Hispaniola.

Ricinus communis L.

Listed by Britton in 1915 (3) on "waste grounds at Uvero." At Sardinera, March 5, 1944, *Chardón and Otero* 945. Listed by Little in 1955 (16) "at Sardinera and Uvero, introduced around buildings." Noted by the writers at Sardinera April 1962 and February 1968, uncommon. RANGE: Puerto Rico, Icacos, U.S. Virgin Islands; Tortola, West Indies, Bermuda, southeastern United States, continental tropical America and Old World tropics.

ANACARDIACEAE

Comocladia dodonaea (L.) Urban

Listed by Britton in 1915 (3) as "frequent on the plateau." On trail to Playa de Pájaros on the plateau, March 4, 1944, *Chardón and Otero* 960; on trail to Gato Cave, May 25, 1944, *Chardón and Otero* 959. Listed by Little in 1955 (16) saying that the oily sap of this tree is poisonous and causes inflammation of the skin upon contact. Noted by the writers at Sardinera and on the plateau, very common, April 1962 and February 1968. RANGE: Puerto Rico, Muertos Island, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda; from Anguilla to St. Vincent and Hispaniola.

Mangifera indica L.

Listed by Little in 1955 (16) as a "planted tree at Sardinera, rare. (Introduced.)" Noted at Sardinera by the writers in April 1962 and February 1968. RANGE: Native of southeast Asia, now widely distributed in the tropics and subtropics of both hemispheres: Puerto Rico, U.S. Virgin Islands; West Indies, Florida, continental tropical America and Old World tropics.

Metopium toxiferum (L.) Krug & Urban

M. linnaei Engl.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Sardinera, October 28, 1940, *L. E. Gregory* 411; March 3, 1944, *Chardón and Otero* 901. Listed by Little in 1955 (16) saying that "the poisonous sap is irritating to the skin upon contact." Noted by Woodbury in April 1962 as the largest tree of the plateau, common everywhere, even at times may be found on the coastal lowland. RANGE: Puerto Rico, Anguilla (Lesser Antilles), Florida, Bahamas, Cuba and Hispaniola.

SAPINDACEAE

Cardiospermum corindum L.

Listed by Britton & Wilson in 1924 (5) from Mona Island although not mentioned in Britton's 1915 paper (3) as present there. At Uvero, rare, June 1–4, 1972, *Woodbury* M-291. RANGE: Puerto Rico, Desecheo, Icacos, St. Thomas (ex Krebs), St. Croix; the West Indies (except Bahamas), continental tropical America and Old World Tropics.

Cardiospermum halicacabum var. **microcarpa** (Kunth) Blume

C. microcarpum Kunth—Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On plateau, near Uvero, March 2, 1944, *Chardón and Otero* 967. At Sardinera, February 22, 1968, *Woodbury, Martorell and García* M-19; M-193; at Uvero, June 1–4, 1972, *Woodbury* 291. RANGE: Puerto Rico, Vieques, Icacos, St. Thomas (ex Krebs), St. Croix; West Indies (except the Bahamas), Texas, continental tropical America and Old World tropics.

Dodonaea viscosa (L.) Jacq. var. **arborescens** (Hook f.) Sherff

D. ehrenbergii Schl.; *D. viscosa* var. *spathulata* (Smith) Benth.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Uvero, October 28, 1940, *L. E. Gregory* 410; at Rancho Grande, December 20, 1940, *F. J. Roena* 6. At Sardinera, March 1, 1944, *Chardón and Otero* 966. Listed by Little in 1955 (16). This variety only from Mona and Anegada. The species *viscosa* is found in Bermuda, West Indies, southern Florida, southern Arizona, Mexico and south; continental tropical America and in the Old World. Noted at Sardinera on the Uvero trail, April 15–17, 1967 by Woodbury; later collected on the same general area but on the plateau, June 1–4, 1972, *Woodbury* 317. RANGE: The variety *arborescens* is typical to Mona Island and Anegada, but the species *viscosa* proper has a wider range as stated above.

Exothea paniculata (Juss.) Radlk.

Listed by Britton in 1915 (3) on "base of limestone cliffs, Sardinera." Listed by Little in 1955 (16), citing Britton. Noted by Woodbury at the base of cliffs at Sardinera, not common, April 15–17, 1962. RANGE: Puerto Rico, Vieques; St. Eustatius, Desiderade and St. Vincent, Greater Antilles, Bahamas, Florida, Mexico and Guatemala.

Hypelate trifoliata Sw.

Listed by Britton in 1915 (3) at the "coastal plain near Sardinera." On the plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 970; in same area, July 21, 1944, *Gregory* 969. Listed by Little in 1955 (16) on the coastal plain and at El Corral de los Indios. On trail east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-79. RANGE: Puerto Rico, Icacos; St. Martin and Anguilla; Greater Antilles, Bahamas, Cayman Islands and southern Florida.

Melicoccus bijugatus Jacq.

Melicocca bijuga L.—At El Uvero, May 24, 1944, *Chardón and Otero* 968. Listed by Little in 1955 (16). Noted by the writers at Uvero beach, April 1962 and February 22–24, 1968, introduced and planted in Mona Island. RANGE: Native of tropical America, cultivated and naturalized in the West Indies. Introduced into tropical Africa and Asia.

CELASTRACEAE

Crossopetalum rhacoma Crantz

Rhacoma crossopetalum L.—Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On limestone plateau near Uvero, February 20–26, 1914, *Britton, Cowell and Hess* 1842. Sardinera, March 1, 1944, *Chardón and Otero* 963; same area, March 5, 1944, *Chardón and Otero* 962; same area, July 17, 1944, *Chardón, Otero and Gregory* 1802. Listed by Little in 1955 (16) as uncommon on the plateau and coastal plain. Noted by Woodbury at Sardinera and plateau, widespread, common, April 1962. RANGE: Puerto Rico, Muertos Island, Icacos, Culebra, U.S. Virgin Islands: Tortola, Virgin Gorda, Anegada; southern Florida, through West Indies south to St. Lucia; from southern Mexico to Colombia, Venezuela and Dutch Guiana; collected from Bermuda in 1875 but not afterwards.

Gyminda latifolia (Sw.) Urban

Listed by Britton in 1915 (3) as "occasional on the coastal plain." At Sardinera, July 21, 1944, *Chardón, Otero and Gregory* 964. Listed by Little in 1955 (16). On trail near Uvero beach, February 22–24, 1968, *Woodbury, Martorell and García* M-73. RANGE: Puerto Rico, Muertos Island, Piñeros, Vieques, St. Thomas; Anegada, West Indies through the Lesser Antilles, from St. Martin to St. Vincent, Florida, Bahamas and Mexico.

Schaefferia frutescens Jacq.

Listed by Britton in 1915 (3) as "common on the coastal plain." On trail to Gato Cave on the plateau, July 20, 1944, *L. E. Gregory* 785; 965. Listed by Little in 1955 (16). Noted by Woodbury at Sardinera and from Uvero to Playa de Pájaros on the plateau. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda; West Indies south to Grenada, Florida.

RHAMNACEAE

Colubrina arborescens (Mill.) Sarg.

C. colubrina (Jacq.) Millsp.—Listed by Britton in 1915 (3) as "occasional along the base of cliffs, coastal plain." At Sardinera, March 1 and May 25, 1944, *Chardón and Otero* 978; 977. Listed by Little in 1955 (16). Noted by Woodbury at Sardinera, common, April 1962. RANGE: Puerto Rico, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada; through the West Indies to Antigua and Barbados, southern Florida, Bahamas, southern Mexico, Guatemala, Honduras. Introduced into El Salvador.

* **Colubrina elliptica** (Sw.) Briz. & Stearn

C. reclinata (L'Her.) Millsp.—Trail from Sardinera to Uvero, July 21, 1944, *Chardón, Otero and Gregory* 976. On plateau east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-30; in same general area, rare, June 1–4, 1972, *Woodbury* M-271. RANGE: Puerto Rico, Desecheo, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada; Greater and Lesser Antilles south to St. Vincent, Bahamas, Florida, Mexico, Guatemala and Venezuela.

Krugiodendron ferreum (Vahl) Urban

Listed by Britton in 1915 (3) as "occasional on the coastal plain." On trail to Gato Cave, July 20, 1944, *Chardón, Otero and Gregory* 973. Listed by Little in 1955 (16) from the coastal plain and El Corral de los Indios. Noted by Woodbury in the coastal plain and at El Corral. On the plateau at Los Cerezos, February 22–24, 1968, *Woodbury, Martorell and García* M-172. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Anegada; Greater and Lesser Antilles south to St. Vincent and Bequia, Bonaire and Curaçao; southern Florida, Bahamas, Mexico, Guatemala, Honduras and British Honduras.

Reynosia uncinata Urban

Listed by Britton in 1915 (3) as "frequent on the plateau." On the plateau near Sardinera, February 20–26, 1914, *Britton, Cowell and*

Hess 1706. At Uvero on the coastal plain, March 2, 1944, *Chardón and Otero* 971; on the plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 972. Noted by Woodbury at Sardinera and common on the plateau, April 1962. On the plateau, February 22–24, 1968, *Woodbury, Martorell and García* M-201. Listed by Little in 1955 (16). RANGE: Puerto Rico, St. Croix; Tortola, Anegada, Anguilla; Hispaniola and Cuba.

* **Ziziphus mauritania** Lam.
Ziziphus jujuba (L.) Lam – Planted at Sardinera, rare, noted by Woodbury, rare, introduced, April 1962. RANGE: Native of the Old World, now in Florida, Puerto Rico and throughout the drier zones of the West Indies and elsewhere in the tropics.

Zizyphus taylori (Britton) M. C. Johnston
Sarcomphalus taylori Britton – Listed by Britton in 1915 (3) as "occasional on the coastal plain." On the plateau, trail to Bajura de los Cerezos, July 21, 1944, *Chardón, Otero and Gregory* 974. Listed by Little in 1955 (16) as rare on the plateau and elsewhere in Mona. Also listed by Little in 1974 (18). At Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-125. RANGE: Only recorded in the Bahamas and Mona Island.

VITACEAE

* **Cissus caustica** Tussac
On the plateau depressions at Los Cerezos, rare to uncommon, June 1–4, 1972, *Woodbury* M-306. RANGE: Puerto Rico, St. Thomas, St. Croix; Hispaniola and Cuba.

* **Cissus sicyoides** L.
Climbing high to top of trees at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-25; M-188. RANGE: Puerto Rico, Desecheo, U.S. Virgin Islands; Tortola, Virgin Gorda; West Indies, Florida and continental tropical America.

Cissus trifoliata (L.) L.
Listed by Britton in 1915 (3) in "coastal thickets." Along trail to Punta Capitán on the plateau, March 7, 1944, *Chardón and Otero* 980; trail to Gato Cave, July 20, 1944, *Chardón and Otero* 979. On the plateau near Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-26, M-215; at Los Cerezos, December 11–12, 1971, *Woodbury, Martorell and García* M-245. RANGE: Puerto Rico, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, Greater Antilles south to Martinique, Grand Cayman, Florida, northern South America and Aruba.

TILIACEAE

Corchorus hirsutus L.
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Sardinera, March 1, 1944, *Chardón and Otero* 981; along trail to Bajura de los Cerezos, March 3, 1944, *Chardón and Otero* 982. Common and widespread at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* 182. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, St. Martin, West Indies, Mexico to South America and northeast tropical Africa.

Corchorus siliquosus L.
Listed by Britton in 1915 (3) as "occasional on the coastal plain." On plateau, trail from Uvero to lighthouse, March 3, 1944, *Chardón and Otero* 983. Noted at Sardinera by Woodbury, April 15–17, 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies, Florida; Texas to northern South America.

MALVACEAE

* **Abutilon americanum** (L.) Sweet
A. abutiloides (Jacq.) Garcke – Uvero, July 21, 1944, *Chardón, Otero and Gregory* 1678. On the coastal plain at Uvero, rare, December 11–12, 1971, *Woodbury, Martorell and García* M-244. RANGE: St. Croix (according to Eggers), St. Thomas (according to Krebs); Bahamas, Cuba, Jamaica, Hispaniola and Mexico. Not recorded in Puerto Rico.

Abutilon umbellatum (L.) Sweet
Listed by Britton in 1915 (3) as "occasional on the coastal plain." Uvero, July 21, 1944, *Chardón, Otero and Gregory* 1801. At the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-1. RANGE: Puerto Rico, Desecheo, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda; St. Barts, Grenada, Trinidad, Margarita, Aruba; Greater Antilles, Mexico and Colombia.

Bastardia viscosa (L.) Kunth
Listed by Britton in 1915 (3) as "occasional on the coastal plain." Noted by the writers at Sardinera, uncommon, April 1962 and February 22–24, 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, U.S. Virgin Islands; Virgin Gorda, Antigua, Barbados; West Indies, Mexico to Colombia and Perú, Galapagos Island (Pacific Ocean).

* **Bastardia bivalvis** (Cav.) Kunth
At Sardinera, rare, June 1–4, 1972, *Woodbury* 257. RANGE: Puerto Rico, St. Thomas (according to Krebs); Greater Antilles and from Mexico to Perú and Brazil.

Gossypium arboreus L. var. **nadam** (Watt). Prokh.
G. barbadense L. – Listed by Britton in 1915 (3) as "spontaneous after cultivation on the coastal plain; apparently not native." This particular variety of cotton is typical to the humid areas of the Antillean region and could not possibly survive under the natural conditions of Mona Island as we know it now. The cotton species found by us and probably by other explorers in the Island since 1940 is quite different (*G. hirsutum*). RANGE: Native of South America, now widespread in cultivation.

* **Gossypium hirsutum** L.
This is the typical wild cotton, a short staple variety found in many of the islands and keys in the Caribbean region. The species is probably *G. hirsutum* var. *marie-galante* a form which occurs in these dry islands adjacent to Puerto Rico, also found in the south coast of the Island (Puerto Rico). Listed by Little in 1955 (15) as *Gossypium* sp., noting that it is "persistent near Uvero and at Playa de Pájaros, apparently under cultivation." At airport area in Sardinera, also at lighthouse, common in both areas, February 22–24, 1968, *Woodbury, Martorell and García* M-69; June 1–4, 1972, *Woodbury* 286. RANGE: Puerto Rico, Lesser Antilles, Cuba, Jamaica and Hispaniola.

† **Herisanthia crispa** (L.) Briz.
Abutilon crispum Medic.; *Gayoides crispum* (L.) Small. – Listed by Britton in 1915 (3) as "occasional on the coastal plain." Playa de Pájaros, March 4, 1944, *Chardón and Otero* 985; at Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1797. On the plateau south of lighthouse, also observed on the coastal plain, February 22–24, 1968, *Woodbury, Martorell and García* M-68. MONITO ISLAND, rare, June 19–20, 1973, *Woodbury et al.* Mt.-13. RANGE: Puerto Rico, St. Thomas; West Indies south to Grenada and Margarita, Florida, Texas and New Mexico south to Central and South America, tropical Asia, as introduced.

Hibiscus tiliaceus L.
Pariti tiliaceum (L.) St. Hil.; *Paritium tiliaceum* (L.) Juss. – Listed by Britton in 1915 (3) at the "border of a swamp, Sardinera." At Sardinera, March 5, 1944, *Chardón and Otero* 991; July 19, 1944, *Chardón and Otero* 989. Listed by Little in 1955 (16), citing Britton's record. Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-78. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies, Florida, Bermuda, continental tropical America and Old World tropics.

Malachra alceifolia Jacq.
This species is listed by Britton and Wilson in 1924 (5), but in Britton's original paper on the flora of Mona lists *Malachra capitata* L., instead. The authors of this paper believe that Britton listed M. *capitata* by error, since the only species present in Mona is *alceifolia* Jacq. Noted by Woodbury at Sardinerain low areas, rare, April 15–17, 1962. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; West Indies (except Bahamas) south to Antigua, Grenada, Barbados, Trinidad and Tobago, Mexico to Guianas and Perú; sparsely naturalized in the Old World.

Malvastrum americanum (L.) Torrey
M. spicatum (L.) A. Gray – Listed by Britton in 1915 (3) on "cultivated ground coastal plain." Sardinera, March 5, 1944, *Chardón and Otero* 986; May 18, 1947, *Chardón, Otero and González-Más* 1923. Noted by Woodbury at Sardinera, April 15–17, 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies (except Bahamas), continental tropical America and Old World tropics.

†* **Malvastrum corchorifolium** (Desr.) Britton
At Sardinera, July 19, 1944, *Chardón and Otero* 1804, 1811; along road to Uvero, May 24, 1944, *Chardón and Otero* 1812. Not seen by us in Mona Island. MONITO ISLAND, local, June 19–20, 1973, *Woodbury et al.* Mt.-12; Mt.-21. RANGE: Puerto Rico, Desecheo, Vieques, St. Croix; Virgin Gorda; Greater Antilles, Florida and the Bahamas.

†* **Malvastrum coromandelianum** (L.) Garcke
Noted in Sardinera on the Uvero trail and also in the lighthouse area by Woodbury, April 15–17, 1962. MONITO ISLAND, local, June 6, 1969, *Kepler* Mt.-4. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, Bermuda, southern United States, continental tropical America and Old World tropics.

* **Pavonia spinifex** (L.) Cav.
P. spinifex (L.) Kuntze – Along trail to Gato Cave, March 7, 1944, *Chardón and Otero* 988. At Sardinera, on cliffs, rare, June 1–4, 1972, *Woodbury* M-269. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Antigua, Barbados, Trinidad, South Caro-

lina to Florida, West Indies and continental tropical America.

† **Sida acuminata** DC.
Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." Along trail to Punta Capitán, March 7, 1944, *Chardón and Otero* 1800. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-126; on the plateau, June 1–4, 1972, *Woodbury* M-303. MONITO ISLAND: June 19–20, 1973, *Woodbury et al.* Mt.-26. RANGE: Puerto Rico, Desecheo, Vieques, St. Thomas, St. Croix; Tortola, Virgin Gorda, St. Martin, St. Barts, St. Kitts, Antigua, Montserrat, Bahamas, Cuba, Hispaniola and northern South America.

Sida acuta Burm.f. ssp. **carpinifolia** (K. Schum.) Borssums Waalkes
Sida carpinifolia L.f. – At Sardinera, March 5, 1944, *Chardón and Otero* 987; along trail to Uvero, May 24, 1944, *Chardón, Otero and Gregory* 1669; Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1796; at Sardinera, August 19, 1944, *Chardón, Otero and Beatty* 1799. In the same area, February 22–24, 1968, *Woodbury, Martorell and García* M-185. Noted by Woodbury on the trail from Sardinera to Uvero and on the lighthouse area, April 15–17, 1962. RANGE: Puerto Rico, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; West Indies, Bermuda, southeastern United States and continental tropical America.

Sida glabra Mill.
Listed by Britton in 1915 (3) as "frequent on the coastal plain." On the plateau, trail to Gato Cave, July 20, 1944, *Chardón, Otero and Gregory* 1798. Los Cerezos, June 1–4, 1972, *Woodbury* M-315. Previously noted by Woodbury on the plateau and at the lighthouse area, April 15–17, 1962. RANGE: Puerto Rico, Desecheo, Culebra, Vieques, St. Thomas, St. Croix; Tortola, Virgin Gorda, from St. Martin to Martinique, Greater Antilles, Mexico south to Central America and Venezuela.

Sida procumbens Sw.
Listed by Britton in 1915 (3) as "occasional on the coastal plain." Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1673. In the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-127; on the plateau at Los Cerezos, June 1–4, 1972, *Woodbury* M-307. RANGE: Puerto Rico, Desecheo, Vieques, St. Croix; Anegada, St. Martin, St. Eustatius, Anguilla, Saba, Guadeloupe, Curaçao, Aruba, Greater Antilles, southern United States, the Bahamas and from Mexico south to Venezuela.

* **Sida rhombifolia** L.
Noted by Woodbury, April 15–17, 1962 and later by Woodbury, Martorell and García, at Sardinera, rare, February 22–24, 1968. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies (except the Bahamas), Bermuda, southeastern United States, continental tropical America and Old World tropics.

* **Sida salviifolia** C. Presl.
Sida erecta Macf. – Noted by Woodbury, April 1962 and by Woodbury, Martorell and García at the Uvero trail and on the plateau near the lighthouse area, February 22–24, 1968. RANGE: Puerto Rico, Muertos Island, Culebrita, St. Thomas, St. Croix; Tortola, Virgin Gorda, Jamaica, Venezuela and Colombia.

Sida spinosa L.
Listed by Britton in 1915 (3) on "cultivated ground, coastal plain." At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-166. Previously noted by Woodbury at Los Cerezos, April 15–17, 1962. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies south to Grenada, Barbados and Aruba; eastern United States, continental tropical America and Old World tropics.

Thespesia populnea (L.) Solander ex Correa
At Sardinera, March 5, 1944, *Chardón and Otero* 990. Listed by Little in 1955 (16). At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-139. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies, Bermuda, Florida, continental tropical America and Old World tropics.

* **Wissadula periplocifolia** (L.) Presl.
Along the trail above Uvero, May 24, 1944, *Chardón and Otero* 984. Not seen by authors. RANGE: Puerto Rico, St. Croix; Grenadines, Trinidad, Margarita, Greater Antilles and northern part of South America.

STERCULIACEAE

Ayenia insularis Cristobal
A. pusilla L. – Listed by Britton in 1915 (3) as "frequent on the coastal plain." Noted by the writers, common all over the plateau, February 22–24, 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies; Florida to Texas and continental tropical America.

Helicteres jamaicensis Jacq.
Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." At Playa de Pájaros, March 2, 1944, *Chardón and Otero* 996. Listed by Little in 1955 (16) citing Britton's original publication on the vegetation of Mona Island. At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-75. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, St. Martin, Greater Antilles and the Bahamas.

† **Melochia tomentosa** L.
Moluchia tomentosa (L.) Britton – Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Along trail to Gato Cave, May 7, 1944, *Chardón and Otero* 994. The species scattered all over the island, very common, as noted by Woodbury, April 15–17, 1968. Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-94. MONITO ISLAND: local, June 6, 1969, *Kepler* Mt.-1; June 19–20, 1973, *Woodbury et al.*, Mt.-35. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda; West Indies, Bahamas, Florida, Texas south to Mexico and Brazil.

* **Melochia pyramidata** L.
Moluchia pyramidata (L.) Britton – Noted by Woodbury at Sardinera, rare. RANGE: Puerto Rico, Icacos, Vieques, St. Croix, St. Thomas (ex Krebs); Tortola, West Indies, Bahamas, southern United States, Mexico to Argentina and Old World tropics.

† **Waltheria indica** L.
W. americana L. – Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." Along the Cerezos trail, March 3, 1944, *Chardón and Otero* 995. Noted by the writers, April 1962 and February 1968 along the Cerezos trail, fairly abundant. MONITO ISLAND, local, June 19–20, 1973, *Woodbury et al.* Mt.-40. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, U.S. Virgin Islands; Virgin Gorda, Anegada, West Indies, Florida, continental tropical America and Old World tropics.

FLACOURTIACEAE

* **Samyda dodecandra** Jacq.
Rare, in sinks or depressions at La Bajura de los Cerezos, June 1–4, 1972, *Woodbury* M-308. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, St. Martin to St. Vincent, Trinidad, Hispaniola and Cuba.

TURNERACEAE

Turnera diffusa Willd.
Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." At Sardinera, February 20–26, 1914, *Britton, Cowell and Hess* 1771. Along the Gato Cave trail, May 2, 1944, *Chardón and Otero* 1795. Noted by Woodbury at Sardinera and on the plateau, common, April 15–17, 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Virgin Gorda, Greater Antilles, Bahamas, Mexico, Honduras and Brazil.

PASSIFLORACEAE

Passiflora foetida L.
Listed by Britton in 1915 (3) in "sandy beach, Playa de Pájaros." Not seen by authors in Mona. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies and continental tropical America.

Passiflora suberosa L.
P. pallida L. – Listed by Britton in 1915 (3): as "common on the coastal plain and on the plateau." On the coastal plain, March 1, 1944, *Chardón and Otero* 999. Noted by Woodbury at Sardinera, on the Uvero trail, April 15–17, 1962. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies, Bermuda, Florida, Bahamas from Mexico to Paraguay.

CARICACEAE

Carica papaya L.
Listed by Britton in 1915 (3) as "common on the coastal plain about Sardinera, apparently established after cultivation. A race with small globose fruits. Original home unknown." At Sardinera, March 1, 1944, *Chardón and Otero* 1000. Listed by Little in 1955 (16). Noted by Woodbury, April 1962, many planted at Sardinera and at the lighthouse area. In February 1968 still persisting and spreading in different areas of the coastal plain. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Jost Van Dyke. Native to tropical America, its original home unknown; widely cultivated and naturalized in the West Indies, Bermuda, southern Florida; from Mexico to Argentina and Brazil; also in the Old World (introduced).

CUCURBITACEAE

Cucumis anguria L.
Listed by Britton in 1915 (3) on "cultivated ground, Sardinera." Noted by Woodbury at Sardinera, rare, April 1962. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Anegada, West Indies (except the Bahamas), Florida, Texas and continental tropical America. Native of Africa.

* **Momordica charantia** L.
In pine grove near old water tank at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-97. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, southern United States, continental tropical America and Old World tropics.

LECYTHIDACEAE

Barringtonia asiatica (L.) Kurz
Listed by Little in 1955 (16) as "one tree now 25 feet tall with four forks about 8 inches d.b.h. has been planted near the wharf at Playa de Pájaros." By December 11, 1971 the forks were about 14 inches d.b.h., as noted by the writers. RANGE: Native to the tropical regions of the Old World, from the South Pacific and from the Philippines to India. Frequently planted in botanical gardens and as an ornamental in parks and homes. Noted in Puerto Rico, Dominican Republic, Hawaii and Port-au-Prince, Haiti (Martorell).

RHIZOPHORACEAE

Rhizophora mangle L.
In swamp at Sardinera, March 5, 1944, *Chardón and Otero* 1019. Listed by Little in 1955 (16) saying that "the trees reach 40 feet in height and 6 inches trunk diameter and have stilt roots to 5 feet high and many seedlings. No standing water was present in August 1954." Noted by Woodbury at the same general area of previous collections, April 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Jost Van Dyke, Virgin Gorda, Anegada, throughout the West Indies, except from Dominica to Trinidad and Tobago and the Dutch West Indies. On both coasts of continental tropical America from Mexico south to Ecuador, northwestern Perú and Brazil; also in Malasia, Galapagos Island, Melanesia and Polynesia.

COMBRETACEAE

Bucida buceras L.
Listed by Britton in 1915 (3) on "coastal woods, Uvero." At Uvero, March 2, 1944, *Chardón and Otero* 1007. Listed by Little in 1955 (16). Common along the trail from Sardinera to Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-186. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Jost Van Dyke, West Indies, Lesser Antilles south to Guadeloupe, Florida, from southern Mexico to Panama and northern South America; Margarita and the Guianas.

Conocarpus erectus L.
Listed by Britton in 1915 (3) as "occasional on coastal sands." Sardinera, March 2, 1944, *Chardón and Otero* 1006. Listed by Little in 1955 (16). Noted by Woodbury, common along Uvero and Sardinera; collected at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-31. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Palomino, Vieques, U.S. Virgin Islands; Tortola, Anegada, Florida, Bermuda, West Indies; from Mexico through Central America to northern South America, Ecuador, Brazil, Galapagos Islands and western tropical Africa.

Laguncularia racemosa (L.) Gaertn.
Listed by Britton in 1915 (3) on the "borders of marshes, coastal plain." In swamp at Sardinera, March 5, 1944, *Chardón and Otero* 1008. Listed by Little in 1955 (16). Noted by Woodbury, near cliffs, at Sardinera, April 1962; later collected, February 22–24, 1968, *Woodbury, Martorell and García* M-178; M-179. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Virgin Gorda, Jost Van Dyke, Anegada, West Indies, Florida, continental tropical America and tropical West Africa.

Terminalia catappa L.
Listed by Britton in 1915 (3) as "occasional on coastal sands." At Sardinera, July 21, 1944, *Chardón, Otero and Gregory* 1005. Listed by Little in 1955 (16) as "introduced on coastal plain." Trees noted by the writers at Sardinera, April 1962 and February 1968. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Florida, continental tropical America and the Old World tropics. Native of the East Indies and Oceania.

MYRTACEAE

Calyptranthes pallens (Poir.) Griseb.
Listed by Britton in 1915 (3) at the "base of cliffs, Uvero." Sardinera, July 19, 1944, *Chardón and Otero* 1010; on plateau along trail to Gato Cave, May 16, 1947, *Chardón, Otero and González-Más* 1913. Listed by Little in 1955 (16). Noted by Woodbury at Sardinera and at the plateau sinks in April 1962, later collected at Bajura de los Cerezos, February 22–24, 1968, *Woodbury, Martorell and García* M-202. RANGE: Puerto Rico, St. Thomas, St. Croix; Greater Antilles, Guadeloupe, Florida, Bahamas, Mexico and Guatemala.

Eugenia axillaris (Sw.) Willd.
Listed by Britton in 1915 (3) as "frequent or occasional on the coastal plain, at the base of cliffs and on the plateau." At Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1013; 1014. Listed by Little in 1955 (16). Noted by Woodbury at Sardinera, uncommon, April 15–17, 1962. RANGE: Puerto Rico, Muertos Island, Desecheo, Icacos, Vieques, St. Thomas, St. Croix; Anegada, Guadeloupe, Marie-Galante, Dominica, St. Lucia, St. Vincent, Greater Antilles, Bahamas, Bermuda, Florida, southern Mexico and from British Honduras to Nicaragua.

Eugenia foetida Pers.
E. maleolens Poir.; *E. myrtoides* Poir.; *E. buxifolia* (Sw.) Willd.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Along trail of Los Cerezos, March 1, 1944, *Chardón and Otero* 1015; Sardinera, July 20, 1944, *Chardón, Otero and Gregory* 1012. Listed by Little in 1955 (16) as *Eugenia myrtoides* Poir., in synonymy. Noted by the writers as very common in Sardinera, April 1962 and February 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, St. Thomas, St. Croix; Tortola, Greater Antilles, Florida, Bahamas southern Mexico to Guatemala.

* **Eugenia monticola** (Sw.) DC.
In base of cliffs at Sardinera, rare, June 1–4, 1972, *Woodbury* M-273. RANGE: Puerto Rico, Muertos Island, Culebra, Vieques, U.S. Virgin Islands; Jost Van Dyke, Tortola, Virgin Gorda; from St. Martin and St. Barts to Grenada, Barbados, Trinidad and Tobago. Also from Venezuela to French Guiana. Recorded at Guatemala.

Eugenia rhombea (O. Berg) Krug & Urban
Listed by Britton in 1915 (3) on "coastal plain between Sardinera and Uvero." At Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1011. Listed by Little in 1955 (16) from Sardinera and El Corral on the plateau. Noted by the writers as common in Sardinera and in many places on the plateau, April 1962 and February 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, St. Thomas, St. Croix; St. Martin, Saba, St. Eustatius, Antigua, Guadeloupe, Greater Antilles, Florida, Bahamas, Mexico and northern South America.

Myrcianthes fragrans (Sw.) McVaugh
Anamomis fragrans (Sw.) Griseb.; *Eugenia fragrans* (Sw.) Willd.—Listed by Britton in 1915 (3) as "occasional on the coastal plain." Listed by Little in 1955 (16) "uncommon on plateau and one of the characteristic tree species at El Corral." On the plateau, trail to Los Cerezos, July 20, 1944, *Chardón, Otero and Gregory* 1016. Noted by the writers along the trail from Sardinera to Uvero in April 1962 and later, February 22–24, 1968, rare. RANGE: Puerto Rico, Vieques, St. John, St. Croix; Tortola, St. Martin, St. Kitts, Antigua, Guadeloupe, Mexico to Central America, Colombia and Venezuela.

Psidium guajava L.
Sardinera, July 21, 1944, *Chardón and Otero* 1009. Listed by Little in 1955 (16), as an introduced tree species. Several trees on airport road and also near houses at Sardinera as noted by Woodbury, April 1962. Later collected at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-119. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Jost Van Dyke, Virgin Gorda; native to tropical America probably from southern Mexico to South America. Introduced into the tropical and subtropical regions of the Old World.

THEOPHRASTACEAE

Jacquinia arborea Vahl
J. barbasco (Loefl.) Mez—Listed by Britton in 1915 (3) as "common in the coastal thickets and occasional on the coastal plain." At Sardinera, March 1, 1944, *Chardón and Otero* 1020. Listed by Little in 1955 (16). Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-84. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, from St. Martin south to Tobago, Curaçao and Bonaire; Greater Antilles. Recently recorded also from Palomino and Piñeros (Puerto Rico).

PLUMBAGINACEAE

† **Plumbago scandens** L.
MONITO ISLAND: local, June 19–20, 1973, *Woodbury et al.* Mt.-32. Not found yet on Mona Island. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands: West Indies, Bahamas, Florida, Texas, Arizona, from Mexico to Argentina.

SAPOTACEAE

Bumelia obovata (Lam.) A. DC.
Listed by Britton in 1915 (3) as "frequent on the coastal plain." Sardinera, March 3 and July 21, 1944, *Chardón and Otero* 1026. Listed by Little in 1955 (16). Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-13. Common on the plateau; also on the Cerezos area. RANGE: Puerto Rico, Desecheo, Muertos Island, U.S. Virgin Islands; Jost Van Dyke, Virgin Gorda, Ane-

gada; from St. Martin to St. Lucia, Curaçao, Bonaire, Aruba, and northern Venezuela; Jamaica and Hispaniola.

Chrysophyllum oliviforme L.
Sardinera, March 2, 1944, *Chardón and Otero* 1024. Listed by Little in 1955 (16). Noted by Woodbury at Sardinera and on plateau depressions, rare, April 1962. RANGE: Puerto Rico, Greater Antilles, Bahamas, Florida, possibly introduced to Mona Island according to Little (16).

Dipholis salicifolia (L.) A. DC.
Bumelia salicifolia (L.) Sw.—Listed by Britton in 1915 (3) on the "coastal plain, Sardinera." Britton and Rose (5) in referring to this particular record noted that "a tree found on Mona Island, in foliage only, is, perhaps, of this genus (*Britton, Cowell and Hess* 1699)." At Los Cerezos, July 21, 1944, *Chardón, Otero and Gregory* 1025. Listed by Little in 1955 (16). In the coastal plain and plateau depressions, rare, June 1–4, 1972, *Woodbury* M-304. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, West Indies south to Barbados, southern Florida, southern Mexico, Guatemala and British Honduras.

Manilkara sapota (L.) P. van Royen
Achras zapota L.; *Sapota achras* Mill.—At Uvero, July 19, 1944, *L. E. Gregory* 778; Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1021. Listed by Little in 1955 (16) as an introduced species. Noted by Woodbury, Martorell and García, April 1962 and February 1968. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola. Native to southern Mexico and Central America south to Costa Rica. Now widely cultivated in the American tropics as well as in the Old World.

Mastichodendron foetidissimum (Jacq.) Cron.
Sideroxylon foetidissimum Jacq.—At Sardinera, July 14, 1944, *Chardón, Otero and Gregory* 1023; March 11, 1944, *Chardón and Otero* 1022. Listed by Little in 1955 (16), as a rare tree about 60 feet high and 24 inches in trunk diameter. Noted by Woodbury in April 1962 but the trunk was about 30 inches d.b.h. Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-128; also collected at Los Cerezos, June 1–4, 1972, *Woodbury* M-312. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Greater Antilles; from Saba south to Barbados; Bahamas, Florida, Yucatán and British Honduras.

OLEACEAE

* **Forestiera eggersiana** Krug & Urban
At the base of cliffs, Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-177; also at the coastal plain, June 1–4, 1972, M-277, M-322. RANGE: Puerto Rico, Desecheo, Vieques, Culebra, U.S. Virgin Islands.

Forestiera rhamnifolia Griseb.
Listed by Little in 1955 (3) as "a rare shrub 10 feet high and 2 inches d.b.h., on the plateau. Collected in 1896 at bluffs of Salt River, St. Croix, but not known from Puerto Rico." Noted on the plateau, rare, June 1–4, 1972, *Woodbury* M-278. RANGE: Cuba, Jamaica, Hispaniola (rare), St. Croix; Guadeloupe, Martinique and Grenada, Mexico and British Honduras.

* **Forestiera segregata** (Jacq.) Krug & Urban
Sardinera, March 6, 1944, *Chardón and Otero* 1028; along trail to Gato Cave, July 20, 1944, *Chardón, Otero and Gregory* 1027. Small tree 3″ d.b.h. and 12 feet high, February 22–24, 1968, *Woodbury, Martorell and García* M-176; on the plateau, rare, June 1–4, 1972, *Woodbury* M-323. RANGE: Puerto Rico, Desecheo, Vieques, St. Croix; Greater Antilles, Bahamas, Florida and Antigua (Lesser Antilles).

APOCYNACEAE

Plumeria obtusa L.
Plumiera obtusa L.; *P. portoricensis* Urban; *P. krugii* Urban—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Uvero, March 2, 1944, *Chardón and Otero* 1029. Listed by Little in 1955 (16) as "common on the plateau especially conspicuous in shrub thickets or cactus brush of eastern part and on the coastal plain." On the plateau, February 22–24, 1968, *Woodbury, Martorell and García* M-115. The generic name of this species has been also known in literature as *Plumiera*. RANGE: Puerto Rico, Greater Antilles, Bahamas, Mexico (a variety) and British Honduras.

Prestonia agglutinata (Jacq.) Woods
Echites agglutinata Jacq.—Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." On the coastal plain, July 21, 1944, *Chardón, Otero and Gregory* 1679. Noted by Woodbury at Sardinera, not common, April 15–17, 1968. On the plateau, February 22–24, 1968, *Woodbury, Martorell and García* M-115. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola and Hispaniola.

Rauvolfia nitida Jacq.
Listed by Britton in 1915 (3) as *R. tetraphylla*, a misnomer for *Rauvolfia nitida*. "Frequent on the coastal plain and on the plateau." At Sardinera, May 24, 1944, *Chardón, Otero and Gregory* 1031; July 19, 1944, same collectors 1032. Listed by Little in 1915 (16). At Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-121. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, St. Kitts, Guadeloupe, Martinique, St. Barts; Greater Antilles and Bahamas.

Rauvolfia viridis Roem. & Schult.
Rauwolfia lamarckii A. DC.—Listed by Little in 1955 (16). Fairly common on the cliffs at Sardinera and Uvero; collected on the plateau, December 11–12, 1971, *Woodbury, Martorell and García* M-241. The genus has been also known in botanical literature as *Rawolfia*. RANGE: Puerto Rico, Icacos, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda and other islands south down to northern South America; Hispaniola. Not recorded from Jamaica or Cuba.

Urechites lutea (L.) Britton
Listed by Britton in 1915 (3) as "occasional on the coastal plain." Sardinera, March 1, 1944, *Chardón and Otero* 1034; May 23, 1944, *Chardón and Otero* 1033. In the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García*, M-149; a widespread species. RANGE: Puerto Rico, Icacos, Vieques, U.S. Virgin Islands; Tortola, Anegada, south to St. Kitts; St. Vincent, West Indies, Florida and the Bahamas.

ASCLEPIADACEAE

* **Cynanchum anegadense** (Britton) Alain
Metastelma anegadense Britton—Listed by Britton in 1915 (3) "as *Metastelma* sp. (undetermined)." In lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-95. Also observed at Sardinera. RANGE: Only in Anegada and Mona Island.

* **Cynanchum lineare** (Bello) Alain
Metastelma lineare Bello—Noted by Woodbury on the plateau, common all over Mona, April 15, 1962. Collected on the plateau, March 25, 1975, *Woodbury* M-335. RANGE: Puerto Rico; also recorded by Urban in Cuba.

Cynanchum monense (Britton) Alain
Metastelma monense Britton—Listed by Britton and Wilson and described as a new species from Mona in 1925 (5). This species probably corresponds to one of the *Metastelma* spp. listed by Britton in his original paper on the vegetation of Mona in 1915 (3). On the plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 1036; along trail to Gato Cave, July 20, 1944, *Chardón, Otero and Gregory* 1035. On plateau above Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-96; on the plateau, December 11–12, 1971, *Woodbury, Martorell and García* M-242. RANGE: Endemic, limestone rocks at Mona Island.

* **Cynanchum parviflorum** Sw.
Metastelma parviflorum R. Br.—At Sardinera, June 1–4, 1972, *Woodbury* M-261. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, Virgin Gorda, St. Martin, St. Barts, Antigua, Guadeloupe, Martinique, Dominica, Trinidad and Margarita.

* **Matelea maritima** (Jacq.) Woods
Ibatia maritima (Jacq.) Dcne.—Uvero, March 2, 1944, *Chardón and Otero* 1038; at Sardinera, July 19, 1944, *Chardón and Otero* 1037. Noted at Uvero area, near cliffs and along the trail to Sardinera, collected at the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-80. RANGE: Puerto Rico, Desecheo, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Cuba (?), Hispaniola; from St. Martin to Trinidad, Curaçao and northern South America.

CONVOLVULACEAE

* **Cuscuta americana** L.
Noted by Woodbury on the plateau, June 1–4, 1972. Collected by Lee Rogers on the plateau, 1974. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Mexico and southern subtropical America.

†* **Cuscuta umbellata** Kunth
On the plateau, lighthouse area, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-38. MONITO ISLAND: June 19–20, 1973, *Woodbury et al.* Mt.-24. RANGE: Puerto Rico, Muertos Island, West Indies, southern and southwestern United States and Mexico.

Evolvulus convulvuloides (Willd.) Stearn
Evolvulus glaber Spreng.—Listed by Britton in 1915 (3) on "moist soil, coastal plain." Noted at Sardinera by Woodbury, April 1962; later collected in the same area June 1–4, 1972 and March 25, 1975, *Woodbury* M-264; M-337. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies, Florida and northern South America.

Ipomoea macrantha Roem. & Schult.
I. tuba (Schlecht.) G. Don; *Calonyction tuba* (Schlecht.) Colla; *C. grandiflorum* (Jacq.) Choisy—Listed by Britton in 1915 (3) as "frequent in coastal thickets." Sardinera, July

19, 1944, *Chardón and Otero* 1040. Noted by Woodbury along the coast, rare, April 15–17, 1962. RANGE: Puerto Rico, Desecheo, Icacos, U.S. Virgin Islands; West Indies, Bahamas, Florida, from Mexico to the Guianas; introduced into the Old World tropics, but native in the Pacific Islands.

Ipomoea microdactyla Griseb.
Exogonium microdactylum (Griseb.) House—Listed by Britton in 1915 (3) as "occasional on the plateau. Specimen insufficient for certain determination." Later, in 1925, Britton and Wilson (5) referring to this specimen say that "a vine growing on the limestone plateau of Mona Island, known only to us from incomplete specimens, has been tentatively referred to *Exogonium microdactylum* (Griseb.) House, otherwise known from Florida, Cuba and the Bahamas . . . " On the plateau along Cerezos trail, March 3, 1944, ,00*Chardón and Otero* 1041. On plateau, north of Sardinera towards extreme west of Mona, February 22–24, 1968, *Woodbury, Martorell and García* M-73. At Sardinera, June 1–4, 1972, *Woodbury* M-81. RANGE: Florida, Cuba and the Bahamas, now Mona Island.

Ipomoea pes-caprae (L.) R. Br.
I. pes-caprae (L.) Roth.—Listed by Britton in 1915 (3) as "common on coastal sands." Playa de Pájaros, March 4, 1944, *Chardón and Otero* 1043. Noted by the writers as common along the coasts at Sardinera, Uvero and Playa de Pájaros, April 1962 and February 1968. Adams (2) lists this plant as *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) Oostrt. specifying that the subspecies *pes-caprae* is restricted to certain Old World localities, the one in the New World being *brasiliensis*. RANGE: Puerto Rico, Icacos, Vieques, U.S. Virgin Islands; Tortola, southeastern United States, West Indies, Bermuda, continental tropical America and Old World tropics.

* **Ipomoea solanifolia** L.
Exogonium solanifolium (L.) Britton—At Sardinera, local, rare, June 1–4, 1972, *Woodbury* M-276. RANGE: Puerto Rico, Vieques, St. Croix, St. Thomas; from St. Barts to St. Vincent.

Ipomoea triloba L.
Listed by Britton in 1915 (3) as "frequent in cultivated ground on the coastal plain." On the plateau, trail to Gato Cave, March 9, 1944 and July 20, 1944, *Chardón and Otero* 1808; 1042. At Sardinera and also in lighthouse area, February 22, 1968, *Woodbury, Martorell and García* M-82; M-164. A common species. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, U.S. Virgin Islands; West Indies, Florida and continental tropical America. Naturalized in tropical regions of the Old World.

* **Jacquemontia cayensis** Britton
At the coastal plain, Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-231. RANGE: Only known from the Bahamas, Anegada and Mona Island.

Jacquemontia havanensis (Jacq.) Urban
J. jamaicensis (Jacq.) Hallier f.—Listed by Britton in 1915 (3) as "occasional on coastal sands." Noted by Woodbury along the Uvero trail at Sardinera, April 1962, later collected in the same general area, December 11–12, 1971, *Woodbury, Martorell and García* M-251. RANGE: Puerto Rico, Culebra, Vieques, St. Thomas, St. Croix; Tortola, Greater Antilles, Bahamas, Florida and Mexico (Yucatán).

Jacquemontia pentantha (Jacq.) G. Don
Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On the plateau along Cerezos trail, March 3, 1944, *Chardón and Otero* 1039; Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1805. Uvero, at the coastal plain, February 22–24, 1968, *Woodbury, Martorell and García* M-83. RANGE: Puerto Rico, Desecheo, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda; West Indies south to Barbados; from Mexico to Perú.

Merremia aegyptia (L.) Urban
Ipomoea aegyptia L.; *Operculina aegyptia* (L.) House—Listed by Britton in 1915 (3) on "cultivated ground, coastal plain." Noted by Woodbury at Sardinera, April 15–17, 1962. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Greater Antilles, from St. Martin south to Trinidad and Curacao, continental tropical America and Old World tropics.

† * **Merremia quinquefolia** (L.) Hallier f.
Ipomoea quinquefolia L.—Noted on the coastal plain, rare, by Woodbury, Martorell and García, February 22–24, 1968. MONITO ISLAND: rare, June 6, 1969, *Kepler* Mt.-34. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, Guadeloupe, Martinique, Grenada, Greater Antilles, and from Mexico to Perú.

BORAGINACEAE

Bourreria succulenta Jacq.
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Uvero, March 2, 1944, *Chardón and Otero* 1051; on plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 1052; Sardinera March 5 and July 19, 1944, *Chardón and Otero* 1049; 1050. Listed by Little in 1955 (16). Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-197. RANGE: Puerto Rico, Desecheo, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies (except the Bahamas), from Mexico to Venezuela.

Cordia collococa L.
C. glabra L.—Listed by Little in 1955 (16) as "several trees up to 30 feet tall and 12 inches d.b.h. were found at Bajura de los Cerezos. Doubtless these trees gave their common name "cerezo" to the locality. Noted by the writers at the same locality, April 1962 and February 1968. RANGE: Puerto Rico, Culebra, U.S. Virgin Islands; West Indies (except the Bahamas), Mexico to northern South America.

Cordia globosa (Jacq.) Kunth
Varronia globosa Jacq.—Listed by Britton in 1915 (3) as "occasional on the coastal plain." Sardinera, March 5, 1944, *Chardón and Otero* 1046; at Uvero, foot of cliffs, March 24 and on plateau along trail to Gato Cave, March 9, 1944, *Chardón and Otero* 1047; 1048. At Uvero and Sardinera, February 22–24, 1968 and December 11–12, 1971, *Woodbury, Martorell and García* M-34; M-196; and *Woodbury* M-246, respectively. Adams (2) refers to this plant as *Cordia globosa* (Jacq.) Kunth var. *humilis* (Jacq.) I. M. Johnston, noting that this variety occurs in Florida, Bahamas, Mexico to Panama, Greater Antilles and Cayman Islands, while *C. globosa* in a strict sense is restricted to the Lesser Antilles and northern South America. RANGE: Puerto Rico, St. Thomas, St. Croix; from St. Barts to Trinidad, Margarita, Curaçao; Jamaica, Bahamas, Cayman Islands, Florida and continental tropical America.

* **Cordia stenophylla** Alain
Varronia angustifolia West—Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1045. On plateau south of lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-33. RANGE: Puerto Rico, St. Thomas, St. Croix and Cuba.

Heliotropium angiospermum Murray
Schobera angiosperma (Murray) Britton: *Heliotropium parviflorum* L.—Listed by Britton in 1915 (3) as "frequent on the coastal plain." Sardinera, July 19, 1944, *Chardón and Otero* 1056; May 15, 1947, *Chardón, Otero and González-Más* 1914. Noted by Woodbury, scattered along the coastal plain, April 15–17, 1962. RANGE: Puerto Rico, Desecheo, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Florida, Mexico to Chile, Bolivia, Guyana and Trinidad.

† * **Heliotropium curassavicum** L.
In coastal cliffs near lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-77. MONITO ISLAND: rare, June 6, 1969, *Kepler* Mt.-8; June 19–20, 1973, *Woodbury et al.* Mt.-14. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Florida to Texas, West Indies, Bermuda, continental tropical America and Old World tropics.

Heliotropium microphyllum Sw.
H. crispiflorum Urban—Listed by Britton in 1915 (3) on "moist soil, coastal plain." Sardinera, February 20–26, 1914, *Britton, Cowell and Hess* 1760. On plateau above Uvero and along trail to Playa de Pájaros, March 2 and 3, 1944, *Chardón and Otero* 953; 1097. Near lighthouse, February 22–24, 1968, *Woodbury, Martorell and García* M-76; M-221; on plateau, June 1–4, 1972, *Woodbury* 318. RANGE: Puerto Rico, Anegada and Hispaniola.

Tournefortia gnaphalodes (L.) R. Br.
Mallotonia gnaphalodes (L.) Britton—Listed by Britton in 1915 (3) as "common on coastal sands." Sardinera, March 1, 1944, *Chardón and Otero* 1053. Noted by the writers along the beach at Sardinera, uncommon, April 1962 and February 1968. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Anegada, West Indies, Florida, Bermuda and Central America.

Tournefortia hirsutissima L.
Listed by Britton in 1915 (3) at "base of limestone cliffs, Sardinera." On the cliffs, rare, collected at Sardinera, June 1–4, 1972, *Woodbury* M-274. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, from St. Martin south to Trinidad and Margarita, Greater Antilles, Florida and continental tropical America.

† **Tournefortia volubilis** L.
T. microphylla Bert.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Sardinera, March 5, 1944; on the plateau, trail to Punta Capitán, March 9, 1944; along trail to Gato Cave, July 20, 1944, *Chardón and Otero* 1055; 1054 and 1806, respectively. On coastal plain, June 1–4, 1972, *Woodbury* M-284. MONITO ISLAND, com-

mon, *Woodbury et al.* Mt.-23. The race from Mona is represented by a shrubby, small-leaved form. RANGE: Puerto Rico, Desecheo, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, St. Martin, Antigua, Hispaniola and northwestern South America.

VERBENACEAE

* **Clerodendrum aculeatum** (L.) Schlechter
Volkamera aculeata L.—Sardinera, May 22, 1944, *Chardón and Otero* 1062. Rare at Sardinera, collected in Uvero area, June 1-4, 1972, *Woodbury* M-288. RANGE: Puerto Rico, Icacos, Culebra, U.S. Virgin Islands; Virgin Gorda, Anegada, Inagua, West Indies south to Barbados; naturalized in Bermuda; from Mexico to Venezuela and the Guianas; introduced into Senegal, Guinea and Gambia.

* **Duranta repens** L.
On the coastal plain, rare, February 22-24, 1968, *Woodbury, Martorell and García* M-47; M-174. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies, Bermuda, Florida and continental tropical America.

Lantana camara L.
Lantana scabrida Soland—Listed by Britton in 1915 (3) as "Collected by Prof. Stevens, not found by us." On the plateau above Gato Cave, March 9, 1944, *Chardón and Otero* 1058. Sardinera, rare, February 22-24, 1968, *Woodbury, Martorell and García* M-170. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad and Aruba; Florida, Bermuda and continental tropical America.

Lantana involucrata L.
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Sardinera, March 1, 1944; on the plateau above Uvero, March 2, 1944; *Chardón and Otero* 1057; 1059. Listed by Little in 1955 (16) as "common on the plateau, especially in the shrub thickets or cactus brush, where it is one of the dominant species. Apparently this species along with *Croton* spp. has increased with overgrazing by goats." At Sardinera, February 22-24, 1968, *Woodbury, Martorell and García* M-88. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies, Bermuda, Florida, Central America and Galapagos Islands.

* **Lantana urticifolia** Mill.
On the plateau, rare, collected June 1-4, 1972, *Woodbury* M-300. RANGE: Puerto Rico (south coast), West Indies including Grand Cayman.

* **Priva lappulacea** (L.) Pers.
Sardinera, May 15, 1947, *Chardón and Otero* 1919. Noted at Sardinera by Woodbury, uncommon, April 15-17, 1962. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, Bermuda, Florida and continental tropical America. Introduced into West Africa and Asia.

* **Stachytarpheta cayennensis** (L. C. Rich.) Vahl
Valerianoides cayennense (L. C. Rich.) Kuntze—Noted by Woodbury at the coastal plain, uncommon, April 15-17, 1962. RANGE: Puerto Rico, Hispaniola, Jamaica, from St. Kitts to Barbados, Mexico, Perú and Argentina.

Stachytarpheta jamaicensis (L.) Vahl
Valerianoides jamaicense (L.) Kuntze; *V. jamaicensis* (L.) Medic.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Sardinera, March 1, 1944, *Chardón and Otero* 1061. Noted at Sardinera and Uvero by Woodbury, April 15-17, 1962. RANGE: Puerto Rico, Muertos Island, Culebra, Culebrita, Vieques, St. Thomas, St. John; Tortola, West Indies, Bermuda, Florida, continental tropical America and Old World tropics.

Stachytarpheta strigosa Vahl
Valerianoides strigosa (Vahl) Kuntze; *V. strigosum* (Vahl) Britton—Listed by Britton in 1915 (3) "frequent on the coastal plain and on the plateau." On plateau, trail to Playa de Pájaros, March 4, 1944, *Chardón and Otero* 1060. Widespread in Mona according to authors' field observations in April 1962 and February 1968. RANGE: Puerto Rico, St. Thomas, St. John; Tortola, Antigua, St. Vincent, Trinidad, and Hispaniola.

LABIATAE (LAMIACEAE)

* **Coleus amboinicus** Lour.
Noted by Woodbury at Uvero area, March 25, 1975, local, introduced. Its native home unknown. Common in the island of Java (introduced) and elsewhere in some of the Pacific Islands and in areas of the New World. The foliage is used as a condiment for cooking due to its origanum-scented leaves. Apparently native to southeast Asia.

Hyptis pectinata (L.) Poit.
Listed by Britton in 1915 (3) in "cultivated ground on the coastal plain." Noted by Woodbury at Sardinera, rare, April 15-17, 1962.

Collected by him in the same area, June 1-4, 1972, *Woodbury* M-256. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Florida, continental tropical America and Old World tropics.

* **Ocimum sanctum** L.
Noted by Woodbury along the Uvero trail; at the edge of cliff in the lighthouse area and along the lighthouse road, April 1962, introduced. Later collected at the base of the plateau in Uvero, February 22-24, 1968, *Woodbury, Martorell and García* M-98. RANGE: Puerto Rico, Cuba, Curaçao, northern South America. Native of the Old World.

Salvia micrantha Vahl
Listed by Logier (19) as an additional plant record for Mona Island and St. Croix. However, *S. micrantha* is considered by Britton and Wilson (5) as a synonym of *S. serotina* L., mentioned below. Adams (2) in page 642, making reference to *S. serotina* says: "A variable species from the broader concept of which plants identified as *S. micrantha* Vahl and *S. caymanensis* Millsp. & Uline are not obviously distinct." Thus there exists the possibility that *micrantha* Vahl is the same thing as *serotina* L. RANGE: (see *S. serotina*)

Salvia serotina L.
Sardinera, May 25, 1944, *Chardón and Otero* 1063. Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." Noted by Woodbury at Sardinera, April 1962. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Anegada; West Indies south to Grenada, Bermuda, Florida, Mexico (Yucatán).

* **Scutellaria havanensis** Jacq.
On the cliffs at Sardinera, rare, June 1-4, 1974, *Woodbury* 270. RANGE: Puerto Rico, Hispaniola, Cuba, Bahamas and Florida.

SOLANACEAE

† **Lycium tweedianum** *Griseb. var.* **chrysocarpum** (Urban & Ekman) L. C. Hitchc.
Lycium americanum Jacq.—MONITO ISLAND: common, collected by *Woodbury et al.* Mt.-27, June 19-20, 1973. Not found by authors in Mona Island. In the taxonomic concepts of the Solanaceae the authors are following in part, D'Arcy 1973 (10). RANGE: Anegada, Anguilla, St. Martin, Cuba and Hispaniola.

* **Nicotiana tabacum** L.
Cultivated at Sardinera, rare, noted by Woodbury, April 15-17, 1962. RANGE: Native of South America, now widespread in all warm countries for its valuable leaf.

* **Physalis angulata** L.
At the lighthouse area, February 22-24, 1968, rare, *Woodbury, Martorell and García* M-110. RANGE: Puerto Rico, Icacos, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies, Bermuda, southern United States; continental tropical America and Old World tropics.

Solanum erianthum D. Don
S. verbascifolium L.—Listed by Britton in 1915 (3) as "occasional on the bases of cliffs and on the coastal plain." Listed by Little in 1974 (18). All collections at Sardinera, February 22-24, 1968, *Woodbury, Martorell and García* M-129; June 1-4, 1972 and March 25, 1975, *Woodbury* M-281; M-336. RANGE: Puerto Rico, Muertos Island, Vieques, U.S. Virgin Islands; Tortola, West Indies, Mexico, Central America to northern South America and Perú and Old World tropics.

Solanum americanum Mill.
S. nigrum L.; *S. caribaeum* Dunal; *S. nodiflorum* Jacq.; *S. americanum* var. *nodiflorum* (Jacq.) Edmonds—Listed by Little in 1915 (3) on "cultivated ground, Sardinera." Noted at Sardinera by Woodbury, April 15-17, 1962. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; from Cuba south to Trinidad and Margarita, continental tropical America.

* **Solanum persicifolium** Dunal
On the coastal plain, uncommon, June 1-4, 1972, *Woodbury* M-275. RANGE: Puerto Rico, Culebra, Icacos, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada and Hispaniola.

SCROPHULARIACEAE

Bacopa monnieri (L.) Pennell
Bramia monnieri (L.) Drake; *B. monnieria* (L.) Drake—Listed by Britton in 1915 (3) in "border of pool, Sardinera." On the borders of a fresh water pool at Sardinera, noted by the writers, February 22-24, 1968, rare. RANGE: Puerto Rico, Icacos, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Bermuda, southeastern United States, continental tropical America and Old World tropics.

Capraria biflora L.
Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Sardinera, March 1, 1944, *Chardón and Otero* 1066, 1067. At Sardinera, local, uncommon, February 22-24, 1968, *Woodbury, Martorell and García* M-18. RANGE: Puerto Rico, Ica-

cos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Bermuda, Texas, Mexico, continental tropical America; sparingly introduced and established in the Old World.

Scoparia dulcis L.
Listed by Britton in 1915 (3) "in moist soil on the coastal plain." Sardinera and coastal plain, uncommon, as noted by Woodbury, April 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, southern United States, continental tropical America and Old World tropics.

BIGNONIACEAE

Crescentia cujete L.
At Sardinera, July 21, 1944, *Chardón, Otero and Gregory* 1070. Listed by Little in 1955 (16) "perhaps planted on coastal plain at Sardinera." Noted by the writers, February 22–24, 1968. RANGE: Puerto Rico, Desecheo, U.S. Virgin Islands; Tortola, West Indies, Florida and continental tropical America.

Tabebuia heterophylla (DC.) Britton
T. pallida Miers; *T. lucida* Britton—Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On the plateau above Uvero, March 2, 1944, *Chardón and Otero* 1069; Sardinera, May 24, 1944, *Chardón and Otero* 1068. Listed by Little in 1955 (16) giving details about its taxonomy and botanical synonyms. Widespread and very common in Mona. On plateau, east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-137. RANGE: Puerto Rico, Muertos Island, Vieques, Culebra, Palomino, U.S. Virgin Islands; Tortola, Jost Van Dyke, Virgin Gorda, Anegada, throughout the Lesser Antilles to Barbados and Grenada. Naturalized in Bermuda and planted in southern Florida.

PEDALIACEAE

Sesamum indicum L.
S. orientale L.—Listed by Britton in 1915 (3) on "cultivated ground, coastal plain. Native of the East Indies." Noted by Woodbury at Sardinera, April 15–17, 1962. RANGE: Puerto Rico, Vieques, St. Thomas; cultivated nearly throughout the West Indies; native to the East Indies.

ACANTHACEAE

Blechum pyramidatum (Lam.) Urban
B. blechum (L.) Millsp.; *B. brownei* Juss.—Listed by Britton in 1915 (3) on "shaded rocks, Sardinera." In this same area, May 17, 1947, *Chardón, Otero and Gonzalez-Más* 1922. Noted by Woodbury at Los Cerezos area, April 1962; collected later at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-210. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies and continental tropical America. Introduced into some of the Pacific Islands.

Justicia pectoralis Jacq.
Stethoma pectoralis Jacq.—Listed by Britton in 1915 (3) at "border of pool, Sardinera." At Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-211. RANGE: Puerto Rico, U.S. Virgin Islands; from St. Barts south to Trinidad; Greater Antilles and continental tropical America.

Justicia periplocifolia Jacq.
Listed by Britton in 1915 (3) as "occasional on the coastal plain; a narrow-leaved race." Noted by Woodbury at Los Cerezos, April 1962; on the cliffs at Sardinera, June 1–4, 1972, *Woodbury* M-267. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Hispaniola, Mexico and Venezuela.

PLANTAGINACEAE

Plantago major L.
Listed by Britton in 1915 (3) in "cultivated ground, coastal plain." Noted by Woodbury at Sardinera and lighthouse areas, rare, April 15–17, 1962. RANGE: Puerto Rico, Vieques, St. Thomas, St. Croix; Tortola, West Indies, Bermuda, United States and South America. Native of the Old World.

RUBIACEAE

Antirhea acutata (DC.) Urban
Stenostomum acutatum DC.—Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On the plateau, trail to Los Cerezos, March 3, 1944; trail to Gato Cave, May 25, 1944, *Chardón and Otero* 1079; 1078. Listed by Little in 1955 (16). On plateau east of Uvero and near lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-8. RANGE: Puerto Rico, Muertos Island, Vieques; Guadeloupe, Curaçao, Bonaire and Aruba.

* **Antirhea lucida** (Sw.) Hook f.
Stenostomum lucidum (Sw.) Gaertn.—Rare, at Los Cerezos, a small tree 15 feet high and 3 inches d.b.h., June 1–4, 1972, *Woodbury* M-310. RANGE: Puerto Rico, Greater Antilles and St. Croix; south to Trinidad, according to Britton and Wilson (5).

* **Borreria ocymoides** (Burm.f.) DC.

On the plateau, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-200. The specific name has been also written as *ocimoides*. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, West Indies, Bahamas, Florida and continental tropical America.

* **Catesbaea melanocarpa** Krug & Urban
Sardinera, March 1, 1944, *Chardón and Otero* 1075. Noted by Woodbury on the plateau and at the coastal plain, rare, April 15–17, 1962. RANGE: Puerto Rico, St. Croix; Antigua and Guadeloupe.

Chiococca alba (L.) Hitchc.
Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." Sardinera, March 5, 1944, *Chardón and Otero* 1082. Noted by Woodbury on the Cerezos area, April 1962 and collected at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-22. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad, Florida and continental tropical America.

Erithalis fruticosa L.
Listed by Britton in 1915 (3) "common on sand dunes, on the coastal plain and occasional on the plateau." At Sardinera, March 1, 1944, *Chardón and Otero* 1081. On the plateau near Uvero, February 20–26, 1914, *Britton, Cowell and Hess* 1845. Listed by Little in 1955 (16). Common, widespread, at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-198. RANGE: Puerto Rico, Desecheo, Muertos Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies, Florida and Central America.

Ernodea littoralis Sw.
Listed by Britton in 1915 (3) as "common on coastal sands." Sardinera, March 1, 1944, *Chardón and Otero* 1086; on coastal plain near airfield, July 20, 1944, *Chardón, Otero and Gregory* 1085. Locally common on coastal plain and plateau; on plateau above Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-52, M-198. RANGE: Puerto Rico, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies south to Guadeloupe; Florida, Mexico (Yucatán) and Honduras.

Exostema caribaeum (Jacq.) Roem. & Schult.
Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On the plateau, trail to Los Cerezos, March 3, 1944, *Chardón and Otero* 1072; along trail to Gato Cave, July 20, 1944, *Chardón, Otero and Gregory* 1071. Listed by Little in 1955 (16). Widespread, common, on the plateau east of Uvero, *Woodbury, Martorell and García* M-61, February 22–24, 1968. RANGE: Puerto Rico, Muertos Island, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada; southern Florida; through the West Indies from Cuba to the Bahamas south to Grenada; from Central Mexico to Costa Rica.

Guettarda elliptica Sw.
Listed by Britton in 1915 (3) as "occasional on the coastal plain." On the plateau along Cerezos trail, March 3, 1944, *Chardón and Otero* 1077; at Sardinera, *Chardón, Gregory and Otero* 1076, July 19, 1944. Listed by Little in 1955 (16). On plateau east of Uvero, February 22–24, 1968, *Woodbury, Martorell and García* M-72 and on the plateau, Los Cerezos area, June 1–4, 1972, *Woodbury* M-311. A rare species on the plateau as well as on the coastal plain. RANGE: Puerto Rico, Desecheo, Muertos Island, St. Thomas; Greater Antilles, Bahamas and Florida.

* **Guettarda krugii** Urban
On the coastal plain, December 11–12, 1971, *Woodbury, Martorell and García* M-249. Rare on the plateau and coastal plain. At Los Cerezos, June 1–4, 1972, *Woodbury* M-279. RANGE: Puerto Rico and the Bahamas, now Mona Island.

* **Psychotria microdon** (DC.) Urban
P. pinularis Sessé & Mociño—On cliffs at Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-120; M-175. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, St. Martin, Grenada, Trinidad, Margarita, Guianas, Cuba, and Hispaniola.

Psychotria nervosa Sw.
P. undata Jacq.—Listed by Britton in 1915 (3) as "occasional on the coastal plain." On the plateau depressions, rare, at Los Cerezos, June 1–4, 1972, Woodbury M-316. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Barbados and Trinidad; Florida and Central America.

Psychotria nutans Sw.
At Los Cerezos, July 21, 1944, *Chardón, Otero and Gregory* 1084. Listed by Little in 1955 (16): "small tree to 15 feet in height and 6 inches d.b.h., rare at Bajura de los Cerezos. It is easily recognized by the very thick bark with light brown ridges and deep furrows." RANGE: Cuba, Hispaniola and Antigua. Not present in Puerto Rico.

Randia aculeata L.
Randia mitis L.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." On the plateau along trail to Punta Capitán, March 9, 1944, *Chardón and Otero* 1074; Sardinera, July 19, 1944, *Chardón and Otero* 1073. Listed by Little in 1955 (16). On the coastal plain, February 22–24, 1968, *Woodbury, Martorell and García* M-230; Uvero, December 11–12, 1971, *Woodbury, Martorell and García* M-237. RANGE: Puerto Rico, Icacos, Palomino, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Jost Van Dyke, Anegada, West Indies south to Trinidad, Curaçao, Bermuda, Florida and from Mexico to Venezuela.

* **Randia portoricensis** (Urban) Britton & Standley
On the coastal plain, rare, December 11–12, 1971, *Woodbury, Martorell and García* M-238A. RANGE: Thickets and hills in Ponce and Guánica (south coast of Puerto Rico) and now in Mona Island. Endemic.

* **Spermacoce confusa** Rendle
Incorrectly listed by Britton in 1915 (3) as *S. tenuior*. Again recorded by Britton and Wilson in 1925 (5) from Mona as *tenuior*. The *S. riparia* C. & S., listed below in that publication is the true *tenuior*, a species which occurs in Puerto Rico and the rest of the Greater Antilles but not in Mona. On the plateau, uncommon, collected June 1–4, 1972, near lighthouse, *Woodbury* M-296. RANGE: Puerto Rico, Culebra, Vieques U.S. Virgin Islands; Tortola, Anegada, West Indies, Bermuda, Florida and continental tropical America.

Strumpfia maritima Jacq.
Listed by Britton in 1915 (3) on "limestone plateau near Uvero, frequent." At Playa de Pájaros, March 4, 1944, *Chardón and Otero* 1083. In the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-134; on the plateau, December 11–12, 1971, *Woodbury, Martorell and García* M-250; on the plateau, June 1–4, 1972, *Woodbury* M-295. RANGE: Puerto Rico, Muertos Island, Vieques; Anegada, Greater Antilles; from Anguilla to Guadeloupe; Bonaire, Curaçao, Aruba, Florida and Mexico (Yucatán).

COMPOSITAE

Bidens cynapiifolia Kunth
Listed by Britton in 1915 (3) as "collected by Prof. Stevens, not found by us." Rare, in Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-88A. In the same general area, June 1–4, 1972, *Woodbury* M-255. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies including Trinidad and Tobago; continental tropical America.

* **Bidens pilosa** L.
On the coastal plain along trail from Sardinera to Uvero, March 11, 1944, *Chardón and Otero* 1035. Sardinera, uncommon, February 22–24, 1968, *Woodbury, Martorell and García* M-184. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies, Bermuda, southern United States, continental tropical America and Old World tropics.

Borrichia arborescens (L.) DC.
Listed by Britton in 1915 (3) as "occasional on coastal rocks." Sardinera, March 4, 1944, *Chardón and Otero* 1092. Noted by Woodbury at Playa de Pájaros and Uvero, April 1962, uncommon. RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix; Anegada, West Indies, Bermuda, Bahamas, Florida and continental tropical America.

Conyza bonariensis (L.) Cronquist
Leptilon bonariense (L.) Small—Listed by Britton in 1915 (3) as "cultivated ground, Sardinera." In coastal plain near airfield, July 21, 1944, *Chardón, Otero and Gregory* 1680. Noted at Sardinera by Woodbury, seasonal, rare, April 1962. RANGE: Puerto Rico, Vieques; Tortola, Greater Antilles, from Saba to Trinidad in the Lesser Antilles; Florida, continental tropical America; West Africa and Pacific Islands.

Conyza canadensis (L.) Cronquist
Leptilon pusillum (Nutt.) Britton—Listed by Britton in 1915 (3) as "common in waste and cultivated grounds, coastal plain." Sardinera, July 19, 1944, *Chardón, Otero and Gregory* 1672. Noted by Woodbury in Sardinera, April 15–17, 1962. RANGE: Puerto Rico, Greater Antilles, Bahamas, Bermuda, eastern United States, Antigua, Trinidad and South America. Native of temperate North America.

Eleutheranthera ruderalis (Sw.) Sch. Bip.
Listed by Britton in 1915 (3) on "cultivated ground, coastal plain." On plateau above Gato Cave, March 9, 1944, *Chardón and Otero* 1094. Noted by Woodbury at Sardinera and on the plateau, rare, April 1962. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies (except the Bahamas), Central and South America.

† **Eupatorium corymbosum** Aubl.
Osmia corymbosa (Aubl.) Britton & Wilson; *Eupatorium atriplicifolium* Lam.—Listed by Britton in 1915 (3) on "coastal rocks, Sardinera." In lighthouse area, June 1–4, 1972, *Woodbury* M-293. MONITO ISLAND: common, June 6, 1969, *Kepler* Mt.-2; June 19–20, 1973, *Woodbury et al.* Mt.-28. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Martinique, Hispaniola and the Bahamas.

Eupatorium odoratum L.
Osmia odorata (L.) Sch.—Listed by Britton in 1915 (3) as "common on the coastal plain." On the plateau above Gato Cave, March 3, 1944, *Chardón and Otero* 1668; on trail to Punta Capitán, March 7, 1944 and at Sardinera, March 3, 1944, *Chardón and Otero* 1089; 1090. At Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-100, June 1–4, 1972, *Woodbury* M-263. RANGE: Puerto Rico, Desecheo, Vieques, U.S. Virgin Islands; Tortola, West Indies, Florida and continental tropical America.

Eupatorium oteroi Monachino
At Sardinera March 1 and on the plateau March 9, 1944, *Chardón and Otero* 1906, 1905, respectively. At the base of cliffs, rare, Sardinera April 13, 1962, *Woodbury* M-160. Endemic species to Mona described by Monachino in 1948 (22).

* **Melanthera nivea** (L.) Small
M. calcicola Britton; *M. canescens* O. E. Schulz; *M. confusa* Britton, *M. montana* O. E. Schulz—Noted by Woodbury at Sardinera and lighthouse area, April 15–17, 1962. RANGE: Puerto Rico, Muertos Island, Culebra, Vieques, St. Thomas; Tortola; from St. Barts to Tobago; Cuba.

* **Pectis carthusianorum** Less.
Noted by Woodbury at Sardinera, rare, June 1974. RANGE: Puerto Rico, Hispaniola and Cuba.

* **Pectis linifolia** L.
On the plateau above Gato Cave, March 9, 1944, *Chardón and Otero* 1096. Widespread, common; from the lighthouse area, *Woodbury, Martorell and García* M-105. RANGE: Puerto Rico, Desecheo, Muertos Island, Culebra. Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies south to Grenada and Curaçao; United States, Mexico to Colombia and Venezuela; Galapagos Islands.

* **Pluchea carolinensis** (Jacq.) D. Don
P. odorata of S. Moore, not (L.) Cass; *Conyza carolinensis* Jacq.—Noted by Woodbury at Sardinera, April 15–17, 1962; later collected in the same general area, February 22–24, 1968, *Woodbury, Martorell and García* M-114, M-179. Specimens collected near the pond area at Sardinera, uncommon. RANGE: Puerto Rico, Icacos, Vieques, U. S. Virgin Islands; Tortola, Virgin Gorda, West Indies, Bermuda, Florida; Mexico to northern South America; Pacific islands.

Pluchea odorata (L.) Cass.
P. purpurascens (Sw.) DC.—Listed by Britton in 1915 (3) on the "borders of marshes, coastal plain." Sardinera, March 1, 1944, *Chardón and Otero* 1091. In the same area, rare, in border of pond, June 1–4, 1972, *Woodbury* M-253. RANGE: Puerto Rico, Icacos, St. Thomas, St. Croix; Tortola, Anegada; West Indies south to Guadeloupe; Bermuda, southeastern United States to southern Mexico and Central America.

* **Synedrella nodiflora** (L.) Gaertn.
Noted by the writers at Sardinera and lighthouse area, rare, April 1962 and February 1968. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; West Indies, Florida (introduced), continental tropical America and Old World tropics.

* **Tridax procumbens** L.
Sardinera at airfield, July 21, 1944, *Chardón, Otero and Gregory* 1802. Noted by Woodbury, April 1962. Collected at Sardinera, weedy, seen also at the lighthouse area, February 22–24, 1968, *Woodbury, Martorell and García* M-147. RANGE: Puerto Rico, Cuba, Jamaica; native of Central America, now generally in the tropics and subtropics of both hemispheres.

* **Vernonia cinerea** (L.) Less.
Senecioides cinerea (L.) Kuntze—Sardinera, March 11, 1944, *Chardón and Otero* 1087. In the same area, February 22–24, 1968. *Woodbury, Martorell and García* M-150; noted also at the lighthouse area. RANGE: Puerto Rico, Desecheo, St. Croix; Tortola, Greater Antilles, Montserrat, Guadeloupe, Grenada, Barbados, Florida, Bahamas, Panama. Native of the Old World tropics.

* **Vernonia sericea** L. C. Rich.
Noted by Woodbury at Sardinera, rare, April 15–17, 1962. RANGE: Puerto Rico, Vieques, St. Thomas, St. John and Hispaniola.

Wedelia lanceolata DC.
Listed in Mona by Britton and Wilson 1925 (5). Sardinera, July 19, 1944, *Chardón and Otero* 1093. From cliffs at Sardinera, March 25, 1975, *Woodbury* M-334. RANGE: Puerto Rico and Mona Island, endemic.

Wedelia parviflora L. C. Rich.
Listed by Britton in 1915 (3) in Mona Island but not recorded from this locality by Britton and Wilson in their 1925 publication (5). The writers were not able to find this plant in Mona during their frequent trips there. It is possible that Britton in 1914 collected *W. lanceolata* and labeled it erroneously as *W. parviflora,* however not mentioning his error in the 1925 publication. If *W. parviflora* is present in Mona no collections have been made of it since 1914. RANGE: Puerto Rico, St. Thomas, St. John; Tortola, Virgin Gorda, Anegada, St. Martin, Antigua, Guadeloupe and Martinique.

PHYLUM – PTERIDOPHYTA

Order Filicales

POLYPODIACEAE

Acrostichum aureum L.
Listed by Britton in 1915 (3) on the "border of pool near Sardinera." Near pond at Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-3. RANGE: Puerto Rico, Vieques, Greater Antilles, Bahamas, Martinique, Grenada, Barbados, Trinidad, Florida, from Mexico south to Paraguay; widely distributed in the Old World tropics.

Adiantum fragile Sw.
Listed by Britton in 1915 (3) on "limestone cliff, Sardinera." On cliffs at Sardinera, rare, February 22–24, 1968, *Woodbury, Martorell and García* M-191. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Greater Antilles, Martinique and Guadeloupe.

Cyclopeltis semicordata (Sw.) J. Smith
Listed by Britton in 1915 (3) on shaded limestone rocks, Sardinera." On cliffs, rare, at Sardinera, February 22–24, 1968, *Woodbury, Martorell and García* M-39. RANGE: Puerto Rico, Greater Antilles, Guadeloupe, Dominica, Barbados, St. Vincent, Grenada, Tobago, Trinidad; from southern Mexico to Bolivia.

* **Nephrolepis exaltata** (L.) Schott
On the plateau, cliffs and in caves at Playa de Pájaros, rare, June 1–4, 1972, *Woodbury* M-305. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, Bahamas, Greater Antilles, Bermuda, Florida, Mexico; widely dispersed in the Old World tropics.

* **Pityrogramma calomelanos** (L.) Link
Attached to old stone wall at Sardinera, February 22–24, 1968, rare, *Woodbury, Martorell and García* M-114, M-179. Also at the base of cliffs M-190. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; from Saba and St. Eustatius south to Trinidad and Tobago; from Mexico to southern Brazil; tropical Africa.

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